

# AJR Guidelines for Authors

Authors must submit all manuscripts using the online submission and peer review system at [www.ARRS.org](http://www.ARRS.org) or <http://ajr.edmgr.com>.

## Submission and peer review questions should be addressed to:

ARRS

Publications Department, Attn: Peer Review Manager

44211 Slatestone Court, Leesburg, VA 20176

Telephone: 703-729-3353 or 1-866-940-2777 • Fax: 703-729-5913

Email: [AJRsubmit@arrs.org](mailto:AJRsubmit@arrs.org)

## GENERAL INFORMATION

The *AJR* publishes original contributions to the advancement of medical diagnosis and treatment.

- Submitted manuscripts should not contain previously published material and must not be under consideration for publication elsewhere.
- The *AJR* follows the guidelines of the International Committee of Medical Journal Editors (ICMJE). The guidelines may be viewed at [www.icmje.org](http://www.icmje.org). Any clinical trials on which the article may be based must be registered as outlined in the ICMJE guidelines.
- *AJR* encourages scientifically sound content including diagnostic accuracy studies and observational studies. The *AJR* has modified the criteria to better fit imaging studies. The complete link to guidelines for the Standards for Reporting Diagnostic Accuracy (STARD) checklist is on the STARD website: <http://www.stard-statement.org/>. The *AJR* modified STARD criteria for imaging studies follows: **AJR Modified STARD Criteria 2016**. The complete link to STrengthening the Reporting of OBservational in Epidemiology (STROBE) checklist follows: [www.strobe-statement.org/index.php?id=available-checklists](http://www.strobe-statement.org/index.php?id=available-checklists). The *AJR* modified STROBE criteria for observational studies follows: **AJR Modified STROBE Criteria 2016**.
- Manuscripts that do not conform to the *AJR* Author Guidelines or exceed the Maximums for Articles Submitted to the *AJR* may be returned to the author without review or put on hold until the submission is deemed in compliance with the requirements.
- Manuscript decisions are based on the Editors' discretion and/or input from the peer review process. Reviewers receive manuscripts that have the author and affiliation information blinded from the PDF to ensure an unbiased review.
- Once an accepted manuscript is assigned to a specific issue, authors will be notified as to the scheduled publication date and when they can expect to receive the page proofs via e-mail. If the corresponding author will be unavailable to review these proofs, arrangements should be made for a coauthor or colleague to read and return the proofs.
- Statements made in the article, including changes made by the Editor or manuscript editor, are the responsibility of the author and not of the *AJR* or ARRS.
- Articles will be edited to conform to the individual style of the *AJR*.

## COPYRIGHT AGREEMENT AND COAUTHOR VERIFICATION LETTER

- The *AJR* uses an Electronic Copyright process. Authors submitting manuscripts must electronically check a box to indicate their agreement with the *AJR* Copyright displayed on the screen, as the last step before Approving their manuscript for submission to the *AJR*. Upon submission of the manuscript, Coauthors then receive an e-mail with a clickable link to register their agreement with the *AJR* Copyright language contained in the e-mail. Disclosure of any conflict of interest should be made in the cover letter and on the Full Title Page, or can be e-mailed to [AJRSUBMIT@ARRS.ORG](mailto:AJRSUBMIT@ARRS.ORG).
- All authors and coauthors must have an appropriate degree and institutional affiliation to have contributed to the manuscript.
- Reprints of your article may be ordered by e-mail to [reprints@arrs.org](mailto:reprints@arrs.org) or by phone at 703-729-3353 request "*AJR* reprints".

## GENERAL GUIDELINES FOR ALL SUBMISSIONS

- All new and revised manuscripts submitted to the *AJR* are processed automatically through **CrossCheck** before they undergo peer review. Manuscripts that prove to be overly duplicative of research published elsewhere will not be accepted. Manuscripts may be returned to authors to appropriately address the duplicative content and will be put on hold until the submission is deemed in compliance with the *AJR* Copyright Agreement, which stipulates that manuscripts submitted to the Journal must be original in content and authorship. Authors may be put on a watch list.
- A **cover letter** must be included with the online submission that lists the corresponding author's telephone, fax, and e-mail information and states the type of article being submitted. The letter also **MUST INCLUDE**:
  - a full statement to the editor about all previous publications and presentations, including theses and dissertations, that might be regarded as redundant publication of the same or very similar work;
  - any previous work should be referred to specifically and referenced in the new paper;
  - any previously published **abstracts** for meeting presentations that contain partial or similar material to the new paper;
  - **permission** from the publication source which should be included with the submitted paper to help the editor address the situation;
  - disclosures of each author, individually, which must be stated. If there are no disclosures, that fact must be explicitly stated.
- All authors and coauthors must have an appropriate degree and institutional affiliation to have contributed to the manuscript.
- Manuscripts submitted based on prior abstract(s) or presentation(s) should **include the abstract** from the other sponsoring organization. If the abstract was published, **permission** from the sponsoring organization must be included with the submitted paper, or a copy of a written statement from the sponsoring organization stating permission is not required.

- Manuscripts must follow the *AJR* Guidelines for that specific type of article. (**Refer to the Maximums for Articles table**).
- The manuscript, including references, tables, and figure legends, must be double-spaced in 12-point typeface. Right-hand margins are not justified. *Do not use line numbering*. Manuscript pages must be in portrait orientation.
- Pages must be numbered consecutively beginning with the abstract.
- Authors are responsible to submit a blinded manuscript. Neither author's names nor their affiliations appear anywhere on the manuscript pages or on the images.
- For any study involving human subjects (or animals), state on the Full Title Page and in the Subjects (or Materials) and Methods section of the manuscript that an appropriate institutional review board approved the study.
- Informed consent must be obtained from patients who participated in clinical investigations. If experiments were performed on animals, authors complied with NIH guidelines for use of laboratory animals.
- Use of acronyms and abbreviations is discouraged and kept to a minimum. When used, they are defined at first mention, followed by the acronym or abbreviation in parentheses.
- International System of Units (SI) measurements are used throughout, or the SI equivalent is given in parentheses.
- Names of manufacturers are given for equipment and non-generic drugs.
- The *American Journal of Roentgenology* encourages prospective, multiinstitutional trials and evidence-based manuscripts, specifically in the Original Research and Review article categories.

### **MANUSCRIPT ORGANIZATION**

The manuscript is organized as follows: full title page, abstract, introduction, materials (or subjects) and methods, results, discussion, conclusion, acknowledgments, references, tables, figure legends, and figures. *All manuscripts must be submitted using Microsoft Word. Pages must be in portrait orientation.*

#### **Full Title Page:**

A separate Microsoft Word document with the following information is uploaded. NOTE: This information will not be included in the PDF that goes to the reviewers.

- title of article
- names, email addresses, telephone and fax numbers, and complete institutional addresses (including zip code) of all authors and coauthors with the Corresponding Author clearly identified; articles with more than 7 authors should list all authors on the Full Title Page.
- Abstract
- present addresses of authors who have moved since study
- acknowledgment of grants, disclosures, or other assistance. Disclosures of each author, individually, must be stated. If there are no disclosures, that fact must be explicitly stated.
- IRB statement: statement that an appropriate institutional review board approved the study (for studies involving human subjects or animals); if no IRB approval was required then that must be explicitly stated.

#### **Abstract:**

The abstract should clearly state the objective, materials (or subjects) and methods, results, and conclusions of the study. Include actual data. Do not use abbreviations. Do not use reference citations.

#### **Introduction:**

Describe the objective of the investigation and explain why it is important. Indicate the specific goal or purpose of the article, and indicate why it is worthy of attention. Explain the hypothesis to be tested, the dilemma to be resolved, or the deficiency to be remedied. The objective stated here must be identical to the one given in the title.

#### **Materials (or Subjects) and Methods:**

Describe the methods used to achieve the objective explained in the introduction. Describe the research plan, the materials (or subjects), and the methods used, in that order. Explain in detail how disease was confirmed and how subjectivity in observations was controlled. Explain what data were collected, and how the data were analyzed.

#### **Results:**

The findings of the methods are presented here. All results should flow in a clear, logical sequence from the methods described and not stray from the specific objective of the paper. If tables are used, do not duplicate tabular data in text, but do describe important trends and points.

#### **Discussion:**

Describe the limitations of the research plan, materials (or subjects), and methods, considering both the objective and the outcome of the study. When results differ from those of previous investigators, explain the discrepancy.

#### **Conclusion:**

State what conclusion(s) can be drawn and next steps if any. The conclusion should mirror the conclusion in the abstract.

#### **References:**

- References are **numbered consecutively in the order in which they appear in the text**.
- All references are cited in the text, the reference numbers are enclosed in brackets, and are typed on line with the text (not superscripted).
- Authors are responsible for the accuracy of cited references.

- Citations from internet sources should provide the name of the author(s), the title, the URL (Uniform Resource Locator), the date created from the web page, the date the page was visited.
- Use of references, including those from the internet, should be from the peer reviewed medical literature with a version that can be reliably identified and retrieved. An authoritative and unchanged version of the reference must be available within enduring materials.
- Unpublished data are not cited in the reference list, but are cited parenthetically in the text, for example: (Smith DJ, personal communication), (Smith DJ, unpublished data). This includes papers submitted, but not yet accepted, for publication.
- Papers presented at a meeting are not cited in the reference list but are cited parenthetically in the text, for example: (Smith DJ et al., presented at the 2003 annual meeting of the American Roentgen Ray Society). After first mention, use (Smith DJ et al., 2003 ARRS meeting).
- Inclusive page numbers (e.g., 333–335) are given for all references.
- Journal names are abbreviated according to *Index Medicus*.
- Style and punctuation of references follow the format illustrated in the following examples. (All authors are listed when six or fewer; when seven or more authors, the first three are listed, followed by et al.)

#### *Journal article*

1. Long RS, Roe EW, Wu EU, et al. Membrane oxygenation: radiographic appearance. *AJR* 1986; 146:1257–1260

#### *Book*

2. Smith LW, Cohen AR. *Pathology of tumors*, 6th ed. Baltimore, MD: Williams & Wilkins, 1977:100–109

#### *Chapter in a book*

3. Breon AJ. Serum monitors of bone metastasis. In: Clark SA, ed. *Bone metastases*. Baltimore, MD: Williams & Wilkins, 1983:165–180

#### **Tables:**

- Tables must be relevant and provide the reader with a good summary of the study. They should not simply repeat the working data used by researchers during the execution of the study.
- Each table has a short, descriptive title, and each column has a heading.
- **Tables do not exceed two pages in length and must contain at least four lines and two columns of data.**
- Tables are numbered in the order in which they are cited in the text. Each table should have a discrete number; numbering tables as 1A and 1B is not acceptable and is counted as two tables for total number of tables.
- Abbreviations are defined in an explanatory note below each table.
- Tables are self-explanatory and do not duplicate data given in the text or figures.
- All arithmetic (percentages, totals, differences) has been double-checked for accuracy, and tabular data agree with data given in the text.
- Tables should be prepared in MS Word (editable) format by using a rows-and-column format. Embedded images of tables are not acceptable. Tables in MS Excel (.xls) format are not acceptable. Links to tables in other applications are not acceptable.
- Tables should be included at the end of the manuscript following the References.
- Figures should NOT be embedded in table cells; figures embedded in table cells will not display correctly in the online version of the article.

#### **Figure Legends, Figures, and Previously Published Material:**

- Legends use *AJR* style: **Fig. 1**—47-year-old woman with rheumatoid arthritis. For each subject, supply age, sex, and condition or diagnosis. The *AJR* figure legend style (age and sex and diagnosis) helps specifically with search and retrieval algorithms, greatly increasing the utility of the journal and its content. The specificity of age and sex also signals to the reader that actual cases are being presented, improving the authoritativeness of the article and the journal as a whole.
- All figure parts relating to one patient should have the same figure number. Each figure part is considered an image, when counting total number of images.
- Electronic manipulation of images that materially alters the medical information must be identified and the nature of the alterations described.
- Symbols are uniform in size and style and are large enough to withstand reduction.
- Line drawings and graphs are in black on a white background, using the same size type as the text. Avoid 0.25-mm hairline rules.
- Authors' names and hospital or institutional affiliations do not appear anywhere on the images.
- Patients' names or other patient-identifying information do not appear anywhere on the images. For peer review, artist names on images should be blinded or pixelated.
- Use of a different slice from the same patient or case in a later publication will be considered an adaptation and both proper citation of the original article and permission from the original publisher will be required.
- Written permission to reprint in print and electronic media, including online use, has been obtained for use of all previously published illustrations, and for quoting text of more than 50 words, and an appropriate credit line is given. To obtain permission from the *AJR* to reprint an *AJR* image, a form is available at <http://apps.arrs.org/ajrpermission>). Once received, permission letters should be scanned and e-mailed to [AJRsubmit@arrs.org](mailto:AJRsubmit@arrs.org) with the author's name, manuscript title, and manuscript number included.
- Figures should be included at the end of the manuscript following the tables.
- When accepted, all materials become the property of *AJR/ARRS*.

### Figure Files (Original Submission):

- For the original submission, **Authors are required to submit their figures as embedded images in the MS Word document.** The figures should be inserted at the end of the manuscript with figure legends. This will make it easier for the author to upload the file and will produce a PDF that is easier for the Editors and Reviewers to download.
- Figure captions should be directly above or below the corresponding image.
- TIFF files are not required unless the manuscript is accepted or the Editors ask for revisions.
- Each figure part is counted as one image, when counting total number of images.
- Figures should NOT be embedded in tables; embedded figures will not display correctly in the online version of the article.

### Figure Files (Resubmissions & Accepted Papers):

- Images should be submitted in black and white unless color is medically necessary.
- For resubmissions, the files must be submitted as TIFF or PNG files. Other formats (e.g., JPEG, EPS, GIF, PICT, PowerPoint) or lower resolutions will not be usable.
- Authors must use the following naming convention and submit a separate file for each figure part: Figure\_01a.tif, Figure\_01b.tif, Figure\_02a.tif, etc.
- **Image Size**—All images should be no more than 5 inches in height or width.
- **Black & white images:** TIFF format, Grayscale mode, 300 DPI resolution, No layered files, No alpha channels, No color profiles assigned
- **Color images:** 300 DPI resolution, No layered files, No alpha channels, Color profile if used: CMYK (No Indexed Color, Lab, or RGB profiles)
- **Line art:** 1,200 DPI resolution, Grayscale or Bitmap mode, No layered files, No alpha channels, Color profile if used: CMYK (No Indexed Color, Lab, or RGB profiles)
- Each figure part is counted as one image when counting total number of images.

### Supplemental Data

Per article, up to 2 videos, 2 tables, or 10 figures.

#### Video submission guidelines:

- File format: .mp4 preferred, but can accept .mov, .wmv, .mpg, .mpeg, or .avi (or .mp3 for audio files). No Flash or streaming video files.
- File size: up to 30 MB (split up videos into parts if larger)
- Minimum dimensions: 320 pixels wide by 240 pixels deep
- Maximum length: 10 minutes
- Verify that the videos are viewable in QuickTime or Windows Media Player.
- If multiple video files are submitted, number them in the order in which they should be viewed.
- If patient(s) are identifiable in the video, authors must submit with the manuscript the Patient Permission form completed and signed by the patient.
- If the author does not hold copyright to the video, the author must obtain permission for the video to be published in *AJR*. This permission must be for unrestricted use in all print, online, and licensed versions of *AJR*.

### Resubmission Requirements:

Resubmissions must be submitted through the online submission and peer review system. Resubmissions must include the following files:

- A point-by-point, detailed response to the Editors and/or reviewers' comments must be included either in the Rebuttal section on the submission page or attached as a MS Word document. Responses should be identified by including the reviewer comment preceding the response and by the reviewer number and comment number, for example, comment number 4 provided by reviewer number 2 should be labeled as "[rev 2, comment 4]."
- An updated, full title page. Adding or removing coauthors at the revision stage of the peer review process is not allowed. Added contributors must be acknowledged. Final author order must be established by the revision stage of the peer review process, prior to manuscript acceptance. Changing author order after manuscript acceptance is not allowed. Adding or removing coauthors after manuscript acceptance is not allowed.
- An unblinded, annotated copy of the revised manuscript with changes highlighted. Changes should be identified by the reviewer number and comment number in the margins or in the text to make it clear to the Editors and reviewers which comment the change is addressing.
- A clean, unblinded, un-annotated final version of the revised manuscript (without any embedded figures).
- Manuscript pages must be numbered consecutively. *Do not use line numbering.*
- All figures must be uploaded as individual TIFF or PNG files (even if there are no changes or revisions to the figures). You can include your originally submitted images in your revision by selecting them for inclusion during the resubmission process.

## Maximums for Articles Submitted to the AJR

Type of Article	Pages of Text (words)*	Number of Authors	Abstract required (words)	References	Figures (total number of images)**	Tables
Original Research	18 (4500)	7	Yes (250)	50	7 (15)	4
Technical Innovation	5 (1250)	7	Yes (75)	8	3 (6)	4
Review	15 (3750)	7	Yes (75)	100	10 (24)	4
Clinical Perspective	10 (2500)	7	Yes (75)	75	10 (24)	2
Opinion	5	4	Yes (75)	5	Figure parts and tables cannot exceed 4	0
Letter to the Editor/Reply	2	3	No	4	2 (4)	0

\*Maximum number of pages is exclusive of full title page, references, and figure legends.

\*\*Each part of a figure is counted as one image (i.e., A, B, C for Figure 1 are three images).

\*\*\*Figures should NOT be embedded in table cells; figures embedded in table cells will not display correctly in the online version of the article.

Tables must be no longer than 2 pages, must have at least 2 columns of data, and must be in MS Word (editable) format.

Tables must have a discrete number. Tables numbered 1A, 1B count as 2 tables when counting total number of tables.

## AJR Guidelines for Authors

### TYPES OF ARTICLES

The *AJR* publishes specific types of articles. Each type serves a distinct and separate purpose and is judged by different criteria. The *American Journal of Roentgenology* encourages prospective, multi-institutional trials and evidence-based manuscripts, diagnostic accuracy and observational studies specifically in the Original Research and Review article categories. As noted earlier with diagnostic accuracy and observational studies, we have specific guidelines to assist authors and reviewers to ensure optimal scientific content of manuscripts. We have also adopted checklists for more general Original Research and Review articles. These checklists are included in the article categories listed below. Manuscripts should be constructed according to specific guidelines for that type of article.

The following notes on authorship and conflict of interest apply to ALL article types.

- **Authorship:** Original Research, Clinical Perspectives, Reviews, and Technical Innovations may have up to seven coauthors. Brief contributions such as Letters to the Editor should, under most circumstances, have no more than three coauthors, with one to two being the norm. All authors and coauthors must have an appropriate degree and institutional affiliation to have contributed to the manuscript. Adding or removing coauthors at the revision stage of the peer review process is not allowed. Instead, additional contributors' names can be listed in an acknowledgment. *Adding or removing coauthors after manuscript acceptance is not allowed.* Final author order must be established by the revision stage of the peer review process, prior to manuscript acceptance. Changing author order after manuscript acceptance is not allowed.
- **More Than Seven Authors:** Multi-institutional manuscripts having seven or more authors must provide for the Editor specific information on how each author individually and significantly contributed to the research or otherwise contributed to the development of the manuscript. This information should be included in the cover letter and on the Full Title Page submitted with your manuscript. All authors must be listed on the Full Title Page. Note: The *AJR* follows the authorship guidelines of the ICMJE: [www.icmje.org](http://www.icmje.org)
- **Conflict of interest:** Authors submitting manuscripts to the *AJR* must appropriately disclose any financial relationship with a commercial organization that may have an interest in the content. Disclosures of each author, individually, must be stated in the cover letter and on the full title page submitted with your manuscript. If there are no disclosures, that fact must be explicitly stated. Please refer to the Copyright Agreement for more information on this topic.

### Original Research:

This is the most important type of article because it provides new information based on original research. If the information is accurate and important, and the conclusions are substantiated by the data provided, the paper serves to advance radiology. Statistical analysis to support conclusions is usually necessary. Often an Original Research article is hypothesis based and attempts to provide conclusive evidence as to the validity of the hypotheses. Following is a Original Research checklist: **AJR Original Research Article Checklist 2016. Maximums:** Pages of text – 18 (4,500 words); References – 50; Figures – 7 or total of 15 images; Tables – 4

### Review Article:

Scholarly analysis of recent developments on a specific topic as reported in the literature. No new information is described, and no opinions or personal experiences are expressed. Reviews are not encyclopedic like a chapter in a textbook; rather, they include only the highlights. Following is a Review Article checklist: **AJR Review Article Checklist 2016. Maximums:** Pages of text – 15 (3750 words); References – 100; Figures – 10 or total of 24 images; Tables – 4

**Best Practices (Invited):**

For a focused clinical question, summarize and synthesize the available evidence and provide practice guidance. These articles are distinct from traditional reviews in two ways: 1) they are more narrowly focused on a specific question, e.g. “what is the best imaging technique to evaluate right lower quadrant pain in a pregnant patient”; and 2) there is a strong emphasis on evidence evaluation. Authors heavily probe the evidence, and may conduct a formal meta-analysis; equally, authors are asked to provide guidance in the absence of perfect information, and to highlight gaps in evidence that call for additional research. For guidance, see (e.g., Long SS et al. “Imaging strategies for right lower quadrant pain in pregnancy” *AJR* 2011;196: 4-12. 10.2214/AJR.10.4323; or Kang SK et al. “Solid renal masses: what the numbers tell us.” *AJR* 2014;202: 1196-1206. 10.2214/AJR.14.12502; and others). The format: 1) Clinical Vignette and Image(s); 2) The Imaging Question; 3) Background/Importance; 4) Synopsis and Synthesis of Evidence; 5) Evidence-Based Guidelines; 6) Outstanding Issues that Warrant Research; and 7) Summary (includes Recommendations for Best Practices and Further Research). **Maximums:** Pages of text – 15 (3750 words); References – 100; Figures – 10 or total of 24 images; Tables – 4.

**Technical Innovation:**

This is a brief description of a specific technique, procedure, unique software application, modification of a technique, or new equipment of interest to radiologists. Discussion is limited to the specific message, including the uses of the technique, equipment, or software. Literature reviews and lengthy descriptions of cases are not appropriate. **Maximums:** Pages of text – 5 (1,250 words); References – 8; Figures – 3 or total of 6 images; Tables – 4

**Clinical Perspective:**

This is a description of authors’ retrospective experience with a specific clinical subject. The text describes “how and/or why we do it.” There may be little or no original information and limited analysis of the literature. This is not an appropriate venue for a Case Report-type of paper. **Maximums:** Pages of text – 10 (2500 words); References – 75; Figures – 10 or total of 24 images; Tables – 2

**Opinion Paper:**

Short article (five or fewer pages) giving the author’s personal judgment on a controversial topic. Illustrations are few. Review of the literature is limited to articles that serve to justify the author’s opinion. **Maximums:** Pages of text – 5 (1250 words); References – 5; Figure parts and tables cannot exceed 4

**Letter to the Editor and Reply:**

Letters to the Editor and Replies should offer objective and constructive criticism of articles published in the *AJR* within the previous two months. Letters in this category will rarely be considered if submitted later than two months after publication of the initial article in *AJR*. Only data documented in published material should be included in the letter. Letters should not duplicate prior published material or be under consideration for publication elsewhere. The Editorial staff will publish letters at their discretion. Submitted letters are subject to editing of content and style. **Maximums:** Pages of text – 2 (500 words); References – 4; Figures – 2 or total of 4 images; Tables – 0