ABOUT THE JOURNAL

Journal of Investigative Medicine (JIM) is the official publication of the American Federation for Medical Research. The journal is peer-reviewed and publishes high-quality original articles and reviews in the areas of basic, clinical, and translational medical research.

JIM publishes on all topics and specialty areas that are critical to the conduct of the entire spectrum of biomedical research: From the translation of clinical observations at the bedside, to basic and animal research to clinical research and the implementation of innovative medical care.

The journal aims to provide rapid publication of research through its continuous online publication model. The Journal offers the ability to fast track peer review for extremely novel or competitive research. Authors may contact the editorial office about the particular urgency and scientific importance of their paper and to learn if their paper qualifies for fast track review.

Submissions should be made through the journal's new online submission system. Articles should not be under review or under consideration by any other journal when submitted to JIM.

JIM is a member journal of the Committee on Publication Ethics (COPE) and is a sponsor of the EQUATOR Network, which is an international initiative that promotes transparent, accurate reporting of research studies.

GENERAL ARTICLE FORMAT

ARTICLE TYPES

Review
Review articles are expected to be comprehensive, scholarly, and balanced, presenting an expert curration of the literature on the topic of interest. Generally, reviews are limited to: 250-word abstract; 4,000-word text, excluding references; and 5 figures. Authors are encouraged to consult the Editor before submitting a review for consideration.

Research Tools and Issues
Research Tools and Issues are scholarly works and reviews focusing on areas of broad interest to the research community, including topics relevant to the conduct of clinical research, mentoring, and career development. Manuscripts should not exceed 4,000 words.

Original Research
Original articles should not exceed 5,000 words and 6 figures or tables (not including supplementary material) — articles must be fully documented reports of original research, but should be as concise as possible without compromising the data.

Articles should be organized as follows: Title page, Unstructured Abstract (250 words max), Introduction, Materials & Methods, Results, Discussion, Conflict of Interest, Acknowledgments, References, Tables, Figure Legends, Supplementary Material.

Brief Reports
These reports should be of scientific excellence in clinical or translational research, but not sufficient to warrant publication as Original Research. Examples of appropriate Brief Reports may include: (1) studies that report limited but provocative observations OR (2) relevant negative studies that can provide new information on important topics. The text of a Brief Report is limited to 2,000 words. Brief Reports should include an abstract of no more than 250 words and no more than 2 display items.

Letter to the Editor (e-only)
Letters to the Editor may report original data or discuss published articles in JIM. Letters are not to exceed 1,000 words, 2 figures or tables, and 15 references. Letters should not have an abstract. The Editor may solicit a response from the authors. Letters that report original data will be fully peer-reviewed. All Letters to the Editor are subject to editing and possible abridgment.

Supplements
JIM will consider publishing supplements to regular issues. Supplement proposals should be submitted to the Editorial Office.

MANUSCRIPT PREPARATION

COVER LETTER
Your cover letter should inform the Editor of any special considerations regarding your submission, including but not limited to:
- Details of related papers by the same author(s) already published or under consideration for publication
- Details of previous reviews of the submitted article
- IRB board approval statement if applicable

Copies of related papers, previous Editors' and reviewers' comments, and responses to those comments can be submitted using the File Designation “Supplementary file for Editors only”. Editors encourage authors to submit previous communications to expedite the review process.

NIH EMPLOYEES
Manuscripts authored or co-authored by one or more NIH employee must be submitted with a completed and signed NIH Publishing Agreement and Manuscript Cover Sheet according to NIH's Employee Procedures.

TITLE PAGE
The title page must contain the following information:
- Title of the article
- Full name, postal address, e-mail and telephone number of the corresponding author
- Full name, department, institution, city and country of all co-authors
- Up to five keywords relevant to your manuscript
- Word count, excluding title page, abstract, references, figures and tables
- Unique clinical trial number and the name of the registry if applicable

MANUSCRIPT FORMAT

The manuscript must be submitted as a Word document. A PDF will not be accepted.

The manuscript should be presented in the following order:
- Title page
- Abstract (Note: references should not be included in abstracts)
- Main text separated under appropriate headings and subheadings using the following hierarchy: BOLD CAPS, BOLD LOWER CASE, plain text, ITALICS
- Tables should be in Word format and placed in the main text where the table is first cited. Tables must be cited in the main text in numerical order.
- Acknowledgments, Competing Interests, Funding and all other required statements
- References

Images must be uploaded as separate files (view further details under the Figures/illustrations section). All images must be cited within the main text in numerical order and legends should be provided at the end of the manuscript.
Appendices should be uploaded using the File Designation “Supplementary File” and cited in the main text.

Please remove any hidden text headers or footers from your file before submission.

PAGE CHARGES
Authors of unsolicited papers will be billed a publication page rate of $40/printed page. Letters to the Editor are subject to an $80 charge. If any member of the author team is a current member of the AFMR, page charges are waived.

STYLE
Abbreviations and symbols must be standard. SI units should be used throughout, except for blood pressure values, which should be reported in mm Hg. Drugs should be described using the approved generic name. Where a proprietary (brand) name is used, it should begin with a capital letter. Acronyms should be used sparingly and fully explained when first used.

LANGUAGE POLISHING SERVICE
If you are not a native English speaker, we recommend that you have your manuscript edited by a native speaker prior to submission. Professional editing will improve the grammar, spelling and punctuation of your manuscript, enabling reviewers and editors to concentrate on the scientific content of the paper. Click here for more information.

FIGURES/ILLUSTRATIONS
Images must be uploaded as separate files. All images must be cited within the main text in numerical order, and legends should be provided at the end of the manuscript.

COLOR IMAGES AND CHARGES
Authors of unsolicited manuscripts who wish to publish color figures in print will be charged USD $400 to cover the cost of printing.

Authors are encouraged to supply color illustrations for online publication and black and white versions for print publication. Color publication online is offered at no charge, but the figure legend must not refer to the use of colors.

FILE TYPES
Figures should be submitted in TIFF or EPS format. JPEG files are acceptable in some cases. A minimum resolution of 300 dpi is required, except for line art, which should be 1200 dpi. Histograms should be presented in a simple, two-dimensional format, with no background grid. Ensure that the figure files are labeled with the correct File Designation of “Mono Image” for black and white figures and “Color Image” for color figures. Figures are checked using automated quality control and if they are below the minimum standard you will be alerted and asked to resupply them.

Please ensure that any specific patient/hospital details are removed or blacked out (e.g. X-rays, MRI scans, etc). Figures that use a black bar to obscure a patient’s identity are NOT accepted and the standard is not to show a patient’s face at all.

TABLES
Tables should be in Word format and placed in the main text where the table is first cited. Tables must be cited in the main text in numerical order. Please note that tables embedded as Excel files within the manuscript are NOT accepted. Tables in Excel should be copied and pasted into the manuscript Word file.

Tables should be self-explanatory, and the data they contain must not be duplicated in the text or figures. Any tables submitted that are longer/larger than 2 pages will be published as online-only supplementary material.

MULTIMEDIA FILES
You may submit multimedia files to enhance your article. Video files are preferred in .WMF or .AVI format, but can also be supplied as .FLV, .Mov, and .MP4. When submitting, please ensure you upload them using the File Designation “Supplementary File – Video”.

REFERENCES
Authors are responsible for the accuracy of cited references, and these should be checked before the manuscript is submitted.

CITING IN THE TEXT
References must be numbered sequentially as they appear in the text. References cited in figures or tables (or in their legends and footnotes) should be numbered according to the place in the text where that table or figure is first cited. Reference numbers in the text should be inserted immediately after punctuation (with no word spacing).

Where more than one reference is cited, these should be separated by a comma, for example, [1, 4, 39]. For sequences of consecutive numbers, provide the first and last number of the sequence separated by a hyphen, for example, [22-25]. References provided in this format are translated during the production process to superscript type and act as hyperlinks from the text to the quoted references in electronic forms of the article.

PREPARING THE REFERENCE LIST
References must be numbered consecutively in the order in which they are mentioned in the text.

Only papers published or in press should be included in the reference list. Personal communications or unpublished data must be cited in parentheses in the text with the name(s) of the source(s) and the year. Authors should request permission from the source to cite unpublished data.

DIGITAL OBJECT IDENTIFIER (DOI)
A DOI is a unique string created to identify a piece of intellectual property in an online environment and is particularly useful for articles that are published online before appearing in print (and, therefore, have not yet been assigned the traditional volume, issue and page number references). The DOI is a permanent identifier of all versions of an article, whether raw manuscript or edited proof, online or in print. Thus, the DOI should ideally be included in the citation even if you want to cite a print version of an article.

How to cite articles with a DOI before they have appeared in print

How to cite articles with a DOI after they have appeared in print

PLEASE NOTE: RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF REFERENCES RESTS ENTIRELY WITH THE AUTHOR.

PERMISSIONS
It is the author’s responsibility to secure all permissions prior to publication.

• Material from other source: Any written or illustrative material that has been or will be published elsewhere must be duly acknowledged and
accompanying the written consent of the copyright holder (this may be the publisher rather than the author). This includes your own previously published material if you are not the copyright holder.

- **Reproducing material published by BMJ**: Permissions requests should be made online. Please visit the webpage of the article that you wish to reproduce, click on the ‘Request permissions’ link the right-hand menu and complete the online form.

**ONLINE ONLY SUPPLEMENTARY MATERIAL**
Additional figures and tables, methodology, raw data, etc., may be published online only as supplementary material. If your paper exceeds the word count you should consider if any parts of the article could be published online only. Please note that these files will not be copyedited or typeset and will be published as supplied. Therefore, PDF files are preferred.

All supplementary files should be uploaded using the File Designation “Supplementary File”. Please ensure that any supplementary files are cited within the main text of the article.

**STATISTICS**
Statistical analyses must explain the methods used.

**RESEARCH REPORTING GUIDELINES**
Authors are encouraged to use the relevant research reporting guidelines for the study type provided by the EQUATOR Network. This will ensure that you provide enough information for editors, peer reviewers and readers to understand how the research was performed and to judge whether the findings are likely to be reliable.

The key reporting guidelines are:

- Randomized controlled trials (RCTs): CONSORT guidelines
- Systematic reviews and meta-analyses: PRISMA guidelines and MOOSE guidelines
- Observational studies in epidemiology: STROBE guidelines and MOOSE guidelines
- Diagnostic accuracy studies: STARD guidelines
- Quality improvement studies: SQUIRE guidelines

Research checklists should be uploaded using the File Designation “Research Checklist”.

**PRE-SUBMISSION CHECKLIST**

In order to reduce the chance of your manuscript being returned to you, please check:

- **Author information**: Have you provided details of all of your co-authors? Is the information that you have entered into ScholarOne the same as the information on the manuscript title page?
- **Manuscript length and formatting**: Have you checked that your manuscript does not exceed the word count, number of tables and/or figures, and number of references? Have you provided your abstract in an unstructured format?
- **Tables**: Have you embedded any tables into the main text? Have they been cited in the text? Have you provided appropriate table legends? Have you uploaded any lengthy tables as supplementary files for online publication?
- **Figures**: Have you uploaded any figures separately from the text? Have they been supplied in an acceptable format and are they of sufficient quality? Are they suitable for black and white reproduction (unless you intend to pay any required fees for color printing)? Have the files been labelled appropriately? Have the figures been cited in the text? Have you provided appropriate figure legends?
- **References**: Have all of the references been cited in the text?

**SUPPLEMENTARY FILES AND APPENDICES**: Have you supplied these in an acceptable format? Have they been cited in the main text?

**Statements**: Have you included the necessary statements relating to contributorship, competing interests, data sharing and ethical approval?

**Permissions**: Have you obtained from the copyright holder to use any previously published material? Has the source been acknowledged?

**Revised manuscripts**: Have you supplied both a marked copy and a clean copy of your manuscript? Have you provided a point by point response to the reviewer and editor comments?

**Information required for all authors**:

- Manuscript files in the appropriate format, including a cover letter and title page
- Details of any co-authors (name, institution, city, country and email address)

**EDITORIAL POLICIES**

**AUTHORSHIP**

Authorship implies responsibility and accountability for published work. Authors should refer to the ICMJE authorship recommendations.

Authors should have confidence in the integrity of the contributions of their co-authors. Any individuals listed as co-authors on a manuscript will receive email confirmation of the manuscript submission. Lead authors should ensure that all co-authors fulfill the criteria of authorship and that no authors have been excluded.

- **Acknowledging contributors**: All contributors who do not meet the criteria for authorship should be listed in the Acknowledgements section. Financial and material support should also be acknowledged. Please ensure that anyone acknowledged has granted permission to be listed.
- **Group authorship**: If there are a very large number of authors we may suggest that the authors form a group whose name will appear in the article byline. MEDLINE will list the names of individual group members who are authors or collaborators.
- **Contributorship statement**: A contributorship statement is mandatory for manuscript submission and should outline who has contributed what to the planning,
conduct, and reporting of the work described in the article. This should include both authors and contributors (persons who have contributed materially to the paper but whose contributions do not justify authorship).

- **Alteration to authorship:** Any change in authors after initial submission must be approved by all authors. This applies to additions, deletions, a change of order to the authors’ names or a change to the attribution of contributions. Authors may be contacted to confirm the alteration.

- **Deceased authors:** Deceased persons deemed appropriate as authors should be included with a death dagger (†) next to the author’s name, and a footnote stating that the author is deceased and giving the date of their death e.g. †Deceased 10 October 2015

**CLINICAL TRIALS REGISTRATION**
The ICMJE defines a clinical trial as “any research study that prospectively assigns human participants or groups of humans to one or more health – related interventions to evaluate the effects on health outcomes.” Authors should refer to the [ICMJE clinical trial registration policy](https://www.icmje.org/recommendations/browse/reports/clinical-trials-registry-registry.html).

All clinical trials submitted to JIM must be registered with an ICMJE approved clinical trial registry (such as clinicaltrials.gov) or any of the primary registries that participate in the World Health Organization International Clinical Trial Registry Platform. Authors must include the unique clinical trial number and the name of the registry on the manuscript’s title page.

**COMPETING INTERESTS**
A competing interest is anything that interferes with, or could reasonably be perceived as interfering with, the full and objective presentation or publication of articles submitted to JIM.

A competing interest exists when professional judgment concerning a primary interest (such as patients’ welfare or the validity of research) may be influenced by a secondary interest (such as financial gain or personal relationship). Competing interests can be financial or non-financial, professional or personal. Competing interests can arise in relationship to an organization or another person. Examples of competing interests include the following: board membership, consultancy, employment, expert testimony grants (including pending), contract research, lectures/other education events, speakers’ bureaus, patents (planned, pending or issued), receipt of equipment or supplies, royalties, stock/stock options/other forms of ownership, other personal or professional relationships that may influence or appear to influence. There is nothing inherently unethical about a competing interest, but it must be acknowledged and openly stated.

Declaring potential competing interests is a requirement and is integral to the transparent reporting of research. Failure to declare competing interests can result in immediate rejection of a manuscript. If an undisclosed competing interest comes to light after publication, JIM will take action in accordance with COPE guidelines and issue a public notification to the research community.

It is recommended that all authors download and complete a copy of the [ICMJE disclosure form](https://www.icmje.org/recommendations/browse/ethics-disclosures/competing-interests.html). The corresponding author must insert within the submitted manuscript a summary statement headed “Competing Interests” at the end of the manuscript file (before the references) and in the “Competing interests” section on the ScholarOne submission system if required. This will be included in the published article. If no competing interests exist, the author should include the statement “None declared” under this heading.

**COMPLIANCE WITH FUNDER MANDATES**
Authors should comply with mandates declared” under this heading. There is nothing inherently unethical about a competing interest, but it must be acknowledged and openly stated.

**COPYRIGHT AND AUTHORS’ RIGHTS**
JIM allows authors (or their employers) to reuse their own material in other publications as long as the journal is acknowledged. JIM only requires an exclusive license that allows the American Federation for Medical Research to publish the article in the journal (including any derivative products and subsidiary rights). A non-exclusive license is available for authors that are unable to sign an exclusive license, such as US Federal Government and UK Crown employees. Authors should refer to the latest [JIM Author License](https://www.jimjournal.org/authors.php) for more information.

**DATA SETS**
Large datasets for gene expression microarrays, SNP arrays, and high-throughput sequencing studies must be deposited in a public repository. Microarray data must be deposited in a MIAME-compliant public database. High-throughput sequencing data must be deposited in a MINSEQE-compliant public database. The relevant accession numbers must appear in the main text of the manuscript. Deposition of other types of large datasets in a public repository is strongly encouraged. Other supporting datasets must be made available to any interested reader on the publication date from the authors directly.

**ETHICAL APPROVAL OF RESEARCH**
Every research article must include a...
statement that the study obtained ethics approval or a statement that it was not required and why.

Animal and human studies must be performed in compliance with the US Department of Health and Human Services Guide for the Care and Use of Laboratory Animals (or otherwise relevant guidelines) and must be approved by the authors’ Institutional Review Board(s). A statement with the exact name of the approving IRB board(s) should be included in the cover letter. All clinical investigations must be conducted according to the World Medical Association’s Declaration of Helsinki and include this statement within the Materials and Methods section of the paper. We also strongly encourage all authors to comply with the Animal Research: Reporting In Vivo Experiments (ARRIVE) guidelines.

For studies involving humans categorized by race/ethnicity, age, disease/disabilities, religion, sex/gender, sexual orientation, or other socially constructed groupings, authors should, as much as possible:
- Make explicit methods of categorizing human populations
- Define categories in as much detail as the study protocol allows
- Justify definitions and categories, including for example whether any rules of human categorization were required by their funding agency
- Explain whether (and, if so, how) they controlled for confounding variables such as socioeconomic status, nutrition, environmental exposures, etc.

In cases of possible scientific or publishing misconduct, JIM will consult with COPE and its protocols.

FUNDING
All sources of funding should be declared under the heading “Funding” at the end of the manuscript file before the references. Authors must describe the role of the study sponsor(s), if any, in the study design; in the collection, analysis and interpretation of the data; in the writing of the report; and in the decision to submit the paper for publication. If the funder(s) had no such involvement, this should be stated.

Our submission system supports FundRef, which allows authors to easily supply details of their funder name(s) and grant number(s).

ONLINE FIRST PUBLICATION
Accepted articles are published Online First within 2-3 weeks of arrival in production. Online First articles are indexed by PubMed for improved discoverability.

Online First articles are copy-edited, typeset and approved by the author before publication as both typeset PDFs and searchable full text. Online First articles can be cited using the article’s Digital Object Identifier (DOI). Every article has a unique DOI which is the permanent identifier of all versions of that article. A DOI will always resolve to the latest version.

OPEN ACCESS
JIM is pleased to offer authors a choice in Open Access options to satisfy funder mandates. JIM’s standard license is the Creative Commons Attribution NonCommercial International License. For papers published under this license, JIM’s Article Publishing Charge (APC) is USD $2,000. Authors whose work is funded by the Austrian Science Fund (FWF), Research Councils UK or Wellcome Trust (or any other funder that requires a CC-BY license) and wish to publish their article as Open Access will be able to publish under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The APC for a CC-BY license is USD $2,580.

There are no submission, page or color charges if an APC is paid. Payment of the APC may be made online by credit card, or by bank transfer following receipt of an invoice. Unless a waiver has been granted, accepted articles will not be published until payment has been received. BMJ does not refund APCs once articles have been published.

JIM offers a 100% waiver to corresponding authors from institutions based in Hinari Group A countries and a 50% waiver to authors from institutions based in Hinari Group B countries.

ORCID
ORCID is a system of identification for authors. An ORCID identifier is unique to an individual and acts as a persistent digital identifier to ensure that authors can be distinguished and their work properly attributed. Our submission system supports ORCID, allowing authors to enter their unique identifier.

PATIENT CONSENT
Publication of any personal information about an identifiable living patient requires the explicit consent of the patient or guardian. This includes images, photographs and multimedia files (video and audio). Authors must submit a signed Patient Consent Form with their article.

If consent cannot be obtained because the patient cannot be traced, then publication will be possible only if the information can be sufficiently anonymized. Anonymization means that neither the patient nor anyone else could identify the patient with certainty.

If the patient is deceased authors should seek permission from a relative (as a matter of courtesy and medical ethics). If the relatives are not contactable, the Editor will decide how to proceed.

PEER REVIEW
JIM peer reviews all manuscripts externally or internally. For external review, JIM selects two or more reviewers from a database of experts. For internal review, members of the Editorial Board will review the paper. Once the reviews are received, JIM makes a decision to accept or reject a manuscript or to request revisions in response to the reviewers’ comments.

Every published article includes a statement explaining the article’s provenance and the peer review process used, including whether the article was commissioned or not and whether it was internally or externally reviewed.

PLAGIARISM DETECTION
BMJ is a member of CrossCheck by CrossRef and iThenticate. iThenticate is a plagiarism screening service that verifies the originality of content submitted before publication. iThenticate checks submissions against millions of published research papers, and billions of web content. Authors, researchers and freelancers can also use iThenticate to screen their work before submission by visiting www.ithenticate.com.

PRESS RELEASES
Manuscripts accepted for publication in JIM may be selected for press release by the BMJ Press Office to over 6,000 journalists worldwide. The corresponding author will be notified by email if their manuscript is under consideration for a press release and will have the opportunity to approve the text or decline.

Authors should be aware that selection for press release may add around three
weeks to the standard production process. The press release will be issued under embargo and the article will only publish online once the embargo lifts. Authors are asked not to discuss their work with the media before the press release is issued.

If an author’s institution, organization or funder wants to issue their own press release, authors should ensure that activities are coordinated with the BMJ Press Office and that the embargo is respected.

PRIVACY

JIM uses ScholarOne, the online manuscript processing system; to upload or review a manuscript requires ScholarOne registration. When you register on the JIM ScholarOne site, any data is initially collected by Thomson Reuters. This information may be transferred between Thomson Reuters and BMJ as necessary to enable your manuscript to be processed.

We use your personal information in line with the Thomson Reuters Privacy Policy, which explains what information has been collected about you, how personal information is being used, to whom personal information is being disclosed and how this personal information is stored and protected. This privacy policy has been developed in accordance with legal obligations and may be updated from time to time. If you have any queries concerning the use of your personal information, please contact our ScholarOne Administrator at requests.scholarone@bmj.com.

PUBLICATION EMBARGO

All material accepted for publication in JIM is under embargo until it is published online. This means that until then it should not be distributed to third parties or discussed with the media, with the exception of research distributed to journalists as part of an embargoed press release.

If the material forms part of a submission to a government body or public inquiry before publication, authors should notify JIM at the point of acceptance and ensure that recipients are aware that an embargo is in force. Prior presentation of the research at a conference should be acknowledged in the manuscript.

JIM does not accept submissions of manuscripts that duplicate material already published, or submitted, elsewhere. This may include manuscripts published as electronic preprints on publicly accessible servers.

RETRACTIONS

Retractions are considered in cases of evidence of unreliable data or findings, plagiarism, duplicate publication, and unethical research. We may consider an expression of concern notice if an article is under investigation. The retraction procedure depends on the publication stage of the article:

- **Online First publication**: A new version of the article will be posted containing just the metadata, with a retraction note replacing the original text. A retraction notice will also be published in the next available print issue. The original text will remain accessible.

- **Publication in an issue**: A replacement version of the article will be posted containing just the metadata, with a retraction note replacing the original text. The PDF will be replaced with a version watermarked with “Retracted”, but the original text will remain accessible. A retraction notice will also be published in the next available print issue.

In rare cases, we may have to remove the original content for legal reasons. In such cases we will leave the metadata (title and authors) and replace the text with a note saying the article has been removed for legal reasons. A retraction notice will also be published online and/or in print.

Retraction notices are indexed and linked to the original records in Medline and Web of Science.

SCIENTIFIC MISCONDUCT

There are differing definitions of scientific misconduct. JIM deals with these problems on a case by case basis while following guidance produced by bodies that include the Committee on Publication Ethics (COPE), the World Association of Medical Editors (WAME) and the International Committee of Medical Journal Editors (ICMJE).

JIM also defines duplicate publication, lack of declaration of competing interests and of funding/sponsorship, and other failures of transparency to be forms of misconduct.