This document outlines how to prepare articles for submission. We recommend you read these guidelines in full before submitting your article. A pre-submission enquiry to the Journal Editor is also strongly encouraged before submission.

BioTechniques Author Guidelines

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Journal aims & scope

BioTechniques is a peer-reviewed, open-access journal dedicated to publishing original laboratory methods, related technical and software tools, and methods-oriented review articles that are of broad interest to professional life scientists, as well as to scientists from other disciplines (e.g., chemistry, physics, computer science, plant and agricultural science and climate science) interested in life science applications for their technologies.

Since 1983, *BioTechniques* has been a leading peer-reviewed journal for methods-related research. The journal considers:

- Reports describing innovative new methods, platforms and software, substantive modifications to existing methods, or innovative applications of existing methods, techniques & tools to new models or scientific questions
- Descriptions of technical tools that facilitate the design or performance of experiments or data analysis, such as software and simple laboratory devices
- Surveys of technical approaches related to broad fields of research
- Reviews discussing advancements in techniques and methods related to broad fields of research
- Letters to the Editor highlighting interesting observations or cautionary tales concerning experimental design, methodology or analysis

Audience

The audience for *BioTechniques* consists of research scientists working at the laboratory bench. The journal is a valuable reference for all those whose research interests involve laboratory work in the life sciences.

Special issues

BioTechniques welcomes proposals for Special Focus Issues. Special Focus Issues consist of a collection of articles, including commentary, review and original research content, focused on a hot topic of relevance to the scope of the journal.

More information and a proposal form can be found on our website here: https://editorresources.taylorandfrancis.com/the-editors-role/developing-high-impact-content/guest-advisor

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At-a-glance article formatting checklist

Sections / Article	**Word limit** (excluding abstract and references)	**Abstract**	**Method Summary**	**Graphical Abstract**	**Author Contributions**	**Keywords**	**Article subheadings**	**Future Perspective & Article Highlights**	**Reference limit**	**Figures and tables permitted** (Combined limit of **eight in total** – additional will be made supplementary)	**Supporting cover letter**	**Protocol***
Review	7000	•	•	Optional	•	•	•	•	75	•	•	N/A
Benchmark	1500	•	•	Optional	•	•	•	•	20	•	•	Encouraged
Report	3000	•	•	Optional	•	•	•	•	50	•	•	Encouraged
Letter to the Editor	1500	•	•	•	•	•	•	•	20	•	•	Encouraged
White paper	4000–8000	•	N/A	Optional	•	•	•	•	50	•	•	N/A

*Authors are encouraged to create their protocols on protocols.io, and cite them in the submission. This supports reproducibility and access to research.

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Article types

BioTechniques publishes a range of article types, descriptions of which are outlined below. Authors are encouraged to consult the 'at-a-glance formatting checklist' for details on word counts and other formatting requirements.

The information below gives an overview of the requirements for each article type published by *BioTechniques*. However, authors should consult the International Committee of Medical Journal Editors (ICMJE) "*Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals*" (https://www.icmje.org/recommendations/), in particular the section on "*Preparing a Manuscript for Submission to a Medical Journal*" prior to submitting to a Future Science Group journal, for more detailed information.

Benchmark, Report and Letter to the Editor

Authors of these peer-reviewed article types **must** provide a supporting cover letter on submission briefly detailing:

- Relevance to the journal's audience;
- Where the novelty in the study lies;
- Direct and potential implications of the findings.

Authors are also advised to consult the **Methods Reporting Checklist for Authors**, available in the appendix of this guide. In addition, the **EQUATOR Network** provides contains a comprehensive searchable database of reporting guidelines and also links to other resources relevant to research reporting.

Experimental details and data:

Only where a novel experimental procedure has been employed should full details be provided, such that a skilled scientist would be able to reproduce the results presented. Details of routine or previously reported experimental procedures should be provided via references only. Experimental procedures and/or data running to more than two Word document pages should be placed in a supplementary information file.

BioTechniques encourages authors to submit their data to an open repository, allowing readers to form a complete picture of the manuscript, and to utilize the data in future research endeavours. Repositories can be found via sites such as re3data.org. Where data have been deposited in a public repository, authors should state at the end of the abstract the dataset name, repository name and number.

Reporting of sex & gender information: Authors are encouraged to consult the SAGER Guidelines to ensure the accurate reporting of sex and gender information in study design, data analysis, results and interpretations of findings.

Authors should include ethical information in the methods section of their research articles.

1. Benchmark

Benchmarks are peer-reviewed short communications describing new methods or brief but substantive modifications of existing methods. Authors must demonstrate either significantly improved results compared to standard protocols or equivalent results with substantial time or cost savings. Benchmarks should contain a short 3–4 sentence Abstract (120 words). In addition, a 1–3

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sentence Method Summary (focusing only on the method itself and not supporting data) is also required at submission. The Introduction, Results & Discussion section should be combined in Benchmark articles. Authors are encouraged to provide brief enumerated protocols using the *BioTechniques* template found in these guidelines or other appropriate supplementary materials when necessary.

Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names, contributions & affiliations
- Abstract (maximum 120 words)
- Multidisciplinary abstract (maximum 120 words)
- Method Summary
- Keywords (5–10)
- Main body with no subheadings
- References
- Reference annotations
- Financial disclosure/Acknowledgements
- Ethical conduct of research
- Other pertinent information such as data sharing
- Figures/Tables: should be submitted as separate files (see guidelines below)

2. Report

Reports describe new techniques, materials, and protocols useful in biological and biochemical research laboratories. Manuscripts should present well-rounded studies reporting either innovative methodological advances or novel modifications to existing methods that are of substantive value to the field. Reports should contain four sections: (i) Abstract, (ii) Introduction, (iii) Materials and Methods, and (iv) Results and Discussion. A 1–3 sentence Method Summary (focusing on only the method itself and not supporting data) is required at submission.

Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names, contributions & affiliations
- Abstract (maximum 120 words)
- Multidisciplinary abstract (maximum 120 words)
- Method Summary
- Keywords (5–10)
- Introduction
    - Should only cite directly pertinent references
    - Should not include data or conclusions from the work being reported
- Materials & methods/Experimental
    - Where an organization was paid or otherwise contracted to help conduct the research (e.g., data collection and management), this should be detailed
    - Should include information indicating that the research was approved or exempted from the need for review by the responsible review committee (institutional or national). Where no formal ethics committee is available, a statement indicating that the research was conducted according to the principles of the Declaration of Helsinki should be included
    - Information on the selection and description of participants should define how authors measured race or ethnicity and justify their relevance
- Results & Discussion

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    - Numeric results should be given not only as derivatives (e.g. percentages) but also as the absolute numbers from which the derivatives were calculated
    - Statistical significance of results should be specified, if any
    - Authors should avoid claiming priority or alluding to work that has not been completed
- Conclusions
- Future perspective
- Article Highlights
- References
- Reference annotations
- Financial disclosure/Acknowledgements
- Ethical conduct of research
- Other pertinent information such as data sharing
- Figures/Tables: should be submitted as separate files (see guidelines below)

3. Letter to the Editor

Letters to the Editor highlight interesting observations or cautionary tales concerning experimental design, methodology or analysis. Authors should present their observations with supporting data and recommend potential solutions to the problems raised.

Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names, contributions & affiliations
- Multidisciplinary abstract (maximum 120 words)
- Keywords (5–10)
- Main body with no subheadings
- References
- Reference annotations
- Financial disclosure/Acknowledgements
- Ethical conduct of research
- Other pertinent information such as data sharing

For authors presenting the results of clinical trials, the guidelines recommended by CONSORT and GPP3 should be followed. In addition, where available the clinical trial registration number should be included at the end of the abstract, and on the first mention of the trial in the main body of text. Unregistered clinical trials should be declared as such, and the reason for nonregistration should be provided. Mention of other trials should also include the relevant registration number, where available.

Secondary outcomes, exploratory analyses, and *post hoc* analyses should be clearly identified as such; these may be included in the primary publication or published separately, in which case they should clearly reference the primary publication and should not be published before it.

Diagnostic accuracy studies: Where a diagnostic accuracy study has been carried out, authors should follow the recommendations of STARD.

Observational studies: Where observational research has been carried out, authors should follow the recommendations of STROBE.

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Review

These are surveys of technical approaches related to broad fields of research. Authors should present a balanced perspective on the subject, avoid overemphasis of their own work, and attempt to acknowledge all significant contributions to the field. While Reviews are generally solicited by the editors; prospective authors are welcome to submit proposals.

For additional information on the scope and format of Reviews, please contact the editors directly.

Systematic Reviews:

Systematic Reviews should be conducted following the recommendations of PRISMA. A summary of required sections in provided below, but further information on these should be taken from the PRISMA checklist. In addition, a completed PRISMA checklist should be provided as Supplementary Materials on submission of the article.

Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names, contributions & affiliations
- Abstract (maximum 120 words)
- Keywords (5–10)
- Introduction
- Main body with subheadings
- Conclusions
- Future perspective
- Article Highlights
- References
- Reference annotations
- Financial disclosure/Acknowledgements
- Ethical conduct of research
- Figures/Tables: should be submitted as separate files (see guidelines below)

White Paper

White Papers are authoritative reports that bring together the opinions and current thinking of leading stakeholders or recognized experts. They may offer recommendations, outline proposals and aim to set out current 'consensuses' related to an issue. The issue under discussion should be of immediate importance to the advancement of the field. White Papers will be accepted at the discretion of the Editor.

Word limit: 4000–8000 words (excluding abstract, keywords and references).
Required sections: (for a more detailed description of these sections see Article sections):

- Title (maximum 120 characters)
- Author(s) names & affiliations
- Abstract (maximum 120 words)
- Keywords (5–10)
- Body of article
- References: limit of 50 references
- Acknowledgements: author acknowledgements, plus, where relevant, details of individuals who contributed to the article, but who did not fulfill the criteria to be listed as authors
- Disclosures: to include funding information, financial and/or conflict-of-interest disclosures, disclosure of any writing assistance (and the funding source for this), and any other relevant information

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- There is a combined limit of 4 figures and tables. Any additional tables and figures must be submitted as supplementary information, which will be available online only. All figures/tables should be submitted as separate files.

Interviews

Interviews are conducted with key opinion leaders in the field, and can include a look back over their career and achievements to date, a discussion on their current research, and their thoughts and observations on the field as a whole. Individuals are invited to take part in an Interview, either verbal or written, at the Editor's discretion, and the contents of the interview undergo internal review. The opinions expressed in an Interview are those of the Interviewee, and do not necessarily reflect the views of Taylor & Francis.

Article sections

The following list provides notes on the key article sections; authors should consult the 'At-a-glance formatting checklist' to determine which sections are required for their submission.

Title

Concisely and clearly conveys the scope/novelty of the article including any key words or phrases people might use to search on the topic; not more than **120 characters**. Should not include abbreviations if possible, and should avoid redundant language such as "A study of…".

Author(s) names & affiliations

Including full name, postal address, phone and fax numbers, and e-mail address. Note: we can only list one corresponding author. Where available, authors should also add their ORCID iD during the manuscript submission process. For more information on ORCID, see below. Where patient authors are included, **an affiliation of 'Patient author' should be included** (alongside any additional affiliation desired), to facilitate discoverability on indexing services such as PubMed.

Guidance on author sequence:

Author sequence is at the authors' discretion; however, we suggest following the recommendations in GPP3 Appendix Table 2 (https://www.ismpp.org/gpp3), whereby authors are listed either in order of the level of their contribution, or alphabetically. The corresponding author should always be indicated.

Guidance on a change of affiliation during writing:

Where an author has changed their affiliation prior to the publication of an article, the affiliation should reflect where the major part of the work was completed. Current affiliation and contact information should be listed in an acknowledgement.

Authorship criteria:

Biotechniques follows the recommendations of the ICMJE as regards authorship – authorship should be based on the following four criteria:

1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Contributors who do not fulfill all four criteria should be listed in the acknowledgements section.

Biotechniques is supportive of diverse authorship groups and collaboration. We support the ICMJE recommendations that **individuals who meet the first authorship criterion should be given the opportunity to meet the other criteria wherever possible**, and encourage collaboration and co-authorship with colleagues in the locations where the research is conducted.

Fair accreditation of authorship:

Biotechniques Editors will endeavor to identify papers during the submission process where authorship/contributorship has not been appropriately designated, or that might fall into the category of 'helicopter science', and raise the matter with the submitting author accordingly. In addition, we encourage readers who have concerns on this issue to contact the Journal Editor or the Head of Editorial, Roshaine Wijayatunga.

Patient authorship:

Biotechniques is supportive of the inclusion of patients in all stages of research, including in the authorship of papers. Patient authors can include:

- **A person who lives with or is affected by a disease or condition** (i.e., a broad definition of patient that includes those with lived conditions or receiving health or social care, caregivers, family members and members of patient advocacy groups who represent them)
- **A person who provides unique and valuable input from the patient perspective to the publication**.
- **A person who meets all the criteria required for authorship, as listed above.** Authors are encouraged to refer to this tool, which highlights how each of the four criteria above can be interpreted from the patient author perspective.

Further useful information for patient authors can be found in the **WeCan training module on "Patients in Publications"**.

Group authorship:

When a group name is included as an author (e.g., the XYZ Study Group), the respective group member names should be listed in the acknowledgements section. In relevant Medline/PubMed-indexed journals, these individuals are acknowledged as contributors to the article. The submitting author/agent should therefore ensure that group member names are included in full, are spelled correctly, and appear in the order they wish them to be listed on Medline/PubMed. More guidance from Medline can be found here: https://www.nlm.nih.gov/bsd/policy/authorship.html.

Changes to authorship:

Should a change to authorship be required either before or after article publication, this should be brought to the attention of the Journal Editor. This will then be investigated, and corrections made if deemed appropriate by the Editor and with the agreement of all authors involved (including those being added/removed).

Abstract

Not more than **120 words**; no references should be cited in the abstract. The abstract should highlight the importance of the field under discussion within the journal's scope, and clearly define the parameters of the article.

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For authors presenting the results of clinical trials, the guidelines recommended by CONSORT should be followed when writing the abstract, and the clinical trial registration number included at the end of the abstract, where available.

Data deposition: where data have been deposited in a public repository, authors should state at the end of the abstract the data set name, repository name and number.

Multidisciplinary abstract

Multidisciplinary abstracts are a summary of an article with scientific jargon specific to your discipline removed – the aim of these is to make an article more accessible and discoverable by readers outside of your subject area – they are particularly useful to undergraduate students as well as researchers from any discipline area. Multidisciplinary abstracts should be of a similar length to a regular abstract (120 words), or shorter, and will be featured within the LEARN area of BioTechniques.com to increase the visibility of your article to our members on BioTechniques.com.

Method Summary

Where required, please include a 1–3 sentence description of the method introduced in the manuscript. This should be concise and clearly detail the methodological novelty of the research. Please do not discuss experimental results or the advantages of the methods.

Keywords

Up to ten keywords (minimum of three), including therapeutic area, mechanism(s) of action etc., plus names of drugs and compounds mentioned in the text.

Body of the article

Article content should be arranged under relevant headings and subheadings to assist the reader.

Future perspective

A speculative viewpoint on how the article will impact the field, what further research is needed, etc.

Article Highlights

Not more than 600 words. Bulleted summary points that illustrate the main conclusions made throughout the article. Where appropriate, relevant headings that correspond to those in the manuscript should be inserted.

Example:

Background
- To investigate PK/PD relations and the feasibility to implement therapeutic drug monitoring a LC-MS/MS method to quantify vemurafenib is dried blood spots (DBS) samples was developed.

Experimental
- Whatman FTA DMPK-A cards were used for sample collection.
- This DBS method was validated according to the FDA and the latest EMA guidelines on method validation.

Results & discussion
- DBS samples can be collected by finger prick, since the effect of blood volume and blood spreadability was within the acceptance criteria.
- The DBS concentrations of vemurafenib in DBS samples collected in the outpatient clinic were all within the validated range of the developed assay.

Conclusion
- The assay is considered suitable to quantify vemurafenib in DBS samples.

Accession Numbers

All appropriate datasets, images, and information should be deposited in public resources. Please provide the relevant accession numbers (and version numbers, if appropriate) after first use of the entity and at the end of the abstract (see “abstract” section above). Please also provide accession

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numbers of all entities such as genes, proteins, mutants, diseases, etc. for which there is an entry in a public database.

Acknowledgements

Author acknowledgements, plus, where relevant, details of individuals who contributed to the article, such as study group members, or those who contributed but who did not fulfill the criteria to be listed as authors.

Disclosures

For more information, see Disclosures. Should include:

- Financial and conflict of interest disclosures (or lack of), including:
    - Disclosure of financial support for the current work
    - Author conflict of interest disclosures
    - Writing assistance disclosure, along with any sources of funding for such assistance
- Ethical conduct of research disclosure (where relevant)
- Data sharing statement (where relevant)

For example disclosures please see below.

Disclosures

The following provides further information on financial, COI, ethical and data sharing disclosures that should be included in all relevant publications.

Financial disclosure

Disclosing any information about financial support for the current work, that could influence how readers receive and understand the work. This includes information related to:

- **The work under consideration for publication** – detailing any resources received directly or indirectly (via your institution) to enable the completion of the work (with a timeframe **from the initial conception of the work, to the present**) – such as grants. This includes funding for any **writing assistance** that has been used in the creation of the manuscript, which should be stated along with the sources of funding for such assistance.
- **Relevant financial activities outside the submitted work** – disclosing interactions (e.g., personal, academic or financial relationships) with any entity that could be considered broadly relevant to the work, that could be perceived to influence, or that gives the appearance of potentially influencing, the submitted work. Authors should disclose any such interactions that have occurred for a period of **36 months prior to the submission**.
- **Intellectual property**

Competing interests' disclosure

A competing interest — often called a conflict of 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 rivalry). Competing interests can take different forms, including personal or professional relations and interests with organizations and individuals. We would encourage authors and referees to declare any unpaid roles or relationships that might have a bearing on the publication process. Examples of competing interests include (but are not limited to):

- **Unpaid membership** in a government or non-governmental organization
- **Unpaid membership** in an advocacy or lobbying organization
- **Unpaid advisory** position in a commercial organization

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- Writing or consulting for an educational company
- Acting as an expert witness
- **Any other relationships not covered above** that could be perceived by readers to have influenced, or give the appearance of potentially influencing, the work.

These requirements are based on the ICMJE Conflict of Interest policies (http://www.icmje.org/conflicts-of-interest/).

Writing disclosure

Professional writing assistance provided by a company should be disclosed within the manuscript.

Example financial disclosure:

"This work was supported by a grant from FUNDING BODY (grant no.: XYZ12345). AUTHOR 1 has received consultancy fees from COMPANY A and COMPANY B. AUTHOR 2 has received speaker fees from COMPANY C, has been an advisory board member for COMPANY D, and owns stock in COMPANY E. Author 3 holds a patent for XXX (patent number: XXX). The authors have no other relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript apart from those disclosed."

Example competing interests disclosure:

"AUTHOR 1 is on part of the advisory board of COMPANY A. AUTHOR 2 has unpaid membership in GOVERNMENT A ORGANISATION. AUTHOR 3 has voluntarily developed educational presentations for COMPANY C. The authors have no other competing interests or relevant affiliations with any organization or entity with the subject matter or materials discussed in the manuscript apart from those disclosed."

Example writing disclosure:

"Medical writing and editorial support were provided by WRITER of MEDICAL COMMUNICATIONS COMPANY, and were funded by COMPANY A."

Ethical conduct of research

For studies involving data relating to human or animal experimental investigations, authors should obtain appropriate institutional review board approval and state this within the article (for those investigators who do not have formal ethics review committees, the principles outlined in the Declaration of Helsinki should be followed, and this should be stated accordingly).

In addition, for investigations involving human subjects, authors should obtain informed consent from the participants involved and include an explanation of how this was obtained in the manuscript.

Example ethical disclosure:

"The authors state that they have obtained institutional review board approval from INSTITUTION for the research described. In addition, they have obtained verbal and written informed consent from the patients for the inclusion of their medical and treatment history within this work."

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References

Key points

- Authors should focus on recent papers and papers older than 5 years should not be included except for an over-riding purpose.
- Primary literature references, and any patents or websites, should be numerically listed in the reference section in the order that they occur in the text (including any references that only appear in figures/tables/boxes).
- Websites should only be cited where necessary and a peer-reviewed source is unavailable (authors should be aware that websites can subsequently become obsolete). Where included, a title and full web address should be provided, along with the date the site was accessed by the author(s).
- Preprints should only be cited where necessary and a peer-reviewed source is unavailable (authors should check in the final iteration of their article whether a peer-reviewed source has become available during article processing/review process, and replace the citation as necessary). Where included, the authors, title and full web address should be provided, along with the date the preprint was accessed by the author(s).
- Information from manuscripts submitted but not accepted should be cited in the text as "unpublished observations" with written permission from the source.
- Avoid citing a "personal communication" unless it provides essential information not available from a public source, in which case the name of the person and date of communication should be cited in the text, with written permission from the source.
- References should be denoted numerically and in sequence in the text, using Arabic numerals placed in square brackets, e.g., [12].
- Quote first six authors' names. If there are more than six, then quote first three *et al*.
- Reference annotations: 6–8 references should be highlighted that are of particular significance to the subject under review as "* of interest" or "** of considerable interest". Each of the chosen references should be annotated with a brief sentence explaining why the reference is considered to be of interest/particular interest.

  Example:

  18 Timmerman P, White S, Cobb Z, de Vries R, Thomas E, van Baar B. Update of the EBF recommendation for the use of DBS in regulated bioanalysis integrating the conclusions from the EBF DBS-microsampling consortium. *Bioanalysis* 5(17), 2129–2136 (2013).

  •• **This article sets a standard for dried blood spot method validation.**

- Any references that are cited in figures/tables/boxes that do not appear in the text should also be numerically listed in the reference section in the order that the figure/table/box appears in the text.

For further guidance on references formatting please see this guide.

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Making the most of your article

We encourage authors to enhance their article with various digital features to help readers discover and learn about their research. With in-house graphics and video teams, we can offer a range of services to assist you in the preparation of all digital enhancements. If you are interested in including any digital enhancements with your article, please contact pubsols@tandf.co.uk at any stage.

All digital features undergo peer review. With the exception of graphical abstracts, digital features are published alongside the article as supplementary materials and can be accessed via a thumbnail on the article page. All digital features can be accessed free of charge. Authors retain the copyright of any digital feature they submit to us.

When submitted with the original submission, there are no costs to publish a digital feature. Costs are incurred if we are required to create or edit the feature.

Digital features (apart from graphical abstracts) can be added post-publication. In this instance, a fee of $500 is charged to take into account the additional editorial and publication processing time and costs.

Features are also posted on Figshare, allowing them to be cited independently.

Plain Language Summaries

Plain Language Summaries (PLS) provide a summary of an article in non-technical, jargon-free language that is understandable to non-specialist audiences. These are valuable to a range of readers, including patients, patient advocates, the general public, non-specialist clinicians, research scientists, decision-makers and a range of professionals in the healthcare community.

Expert Medicine journals offer several options for authors who wish to publish a PLS, details of which can be found below, along with links to external useful resources.

Plain Language Summary (within article)

PLS within an article are a short, text-only summary of the article with any technical jargon removed. PLS should be of a similar length to a regular abstract or shorter (no more than 250 words) and are featured within an article alongside the main abstract (and on PubMed, for journals that are indexed there). PLS are peer reviewed, and wherever possible should be submitted at the same time as the manuscript.

Plain Language Summary (alongside article)

Longer form PLS, providing a more detailed summary of the paper, can also be submitted as a supplementary file alongside an article submission. Any format will be considered, including written, video and audio format.

For authors wishing to feature a PLS alongside their article, we offer a writing and development service. If you are interested in learning more, please contact PlainLanguageSummaries@taylorandfrancis.com.

Standalone Plain Language Summary of Publication articles

Plain Language Summary of Publication articles (PLSPs) can be published in all Expert Medicine journals. These are standalone articles published in the journal with their own unique DOI and are thus fully citable. They are plain language, visually enriched articles that provide a summary of a key publication, from an Expert Medicine journal or elsewhere.

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PLSPs are written by authors of the original publication, ideally with a patient as co-author (although this is not mandatory). Additional authors not involved with the original publication can be included in the PLSP; however, they must meet the authorship criteria stipulated by the ICMJE. Following submission of the PLSP to the appropriate Expert Medicine journal, prior to styling into our PLSP template, it will be externally peer reviewed for readability and understanding by suitable individuals selected by the Journal Editor on the basis of experience and expertise.

Separate guidelines are available for the preparation of standalone PLSPs. If you are interested in submitting a standalone PLSLP, please contact PlainLanguageSummaries@taylorandfrancis.com to discuss the next steps.

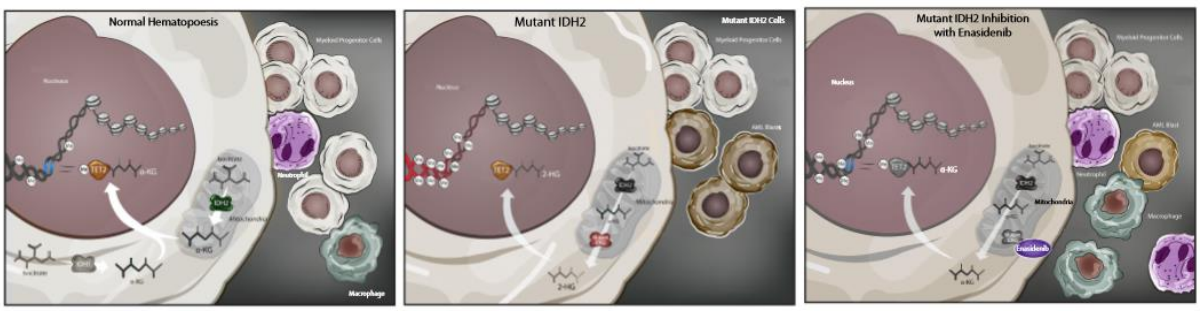
Please note all standalone PLSP in Expert Medicine journals are published on an open access basis so they are freely accessible to all wanting to understand the latest research. This includes hybrid journals where publishing open access is usually optional. There is an article publishing charge (APC) to cover the costs associated with publishing the PLSP. The APC to publish a PLSP Expert Medicine journals is $5,500 / £4,400 / €5,330 / AUD 7,678, plus VAT or other local taxes where applicable in your country. There is no submission charge. PLSPs are not eligible for the waiver programme that usually applies in our fully open access Expert Medicine journals.

The PLSP APC covers the following:

- Publishing the PLSP open access under a CC BY-NC-ND license
- Editorial review of the PLSP prior to publication, including internal review, external peer review by patient/lay/plain language experts and editorial feedback (in terms of content, readability and design)
- In-house processing of the PLSP from submission to publication
- Full design of the final article, including creation of additional imagery, re-styling of graphics and layout into a patient-friendly format
- Online hosting of the PLSP with keywords and other tools to enhance discoverability on our journal website and associated Plain Language Summaries website
- Dissemination across social media (Twitter, LinkedIn and Facebook) using relevant hashtags and mentions
- Indexing on relevant database, such as Medline, where applicable (in accordance with the journal's indexing status)
- Liaison with relevant patient organization to ensure they are aware of the PLSP as a tool to educate and inform their members

Graphical abstract

All Expert Medicine journals encourage the use of graphical abstracts; a concise, visual summary of the main findings of the article, helping readers to quickly understand the findings of the paper and its relevance to them.



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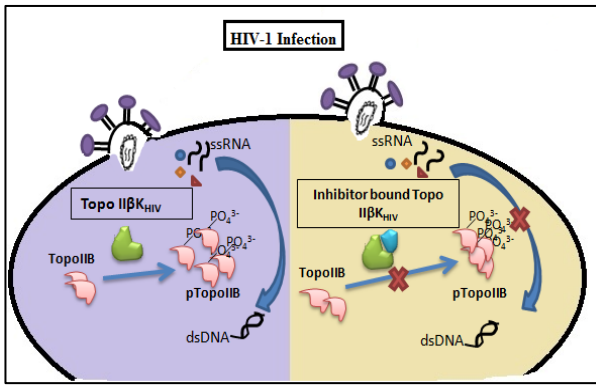
Graphical abstracts are made freely accessible to all readers and feature prominently on the article webpage alongside the main abstract.

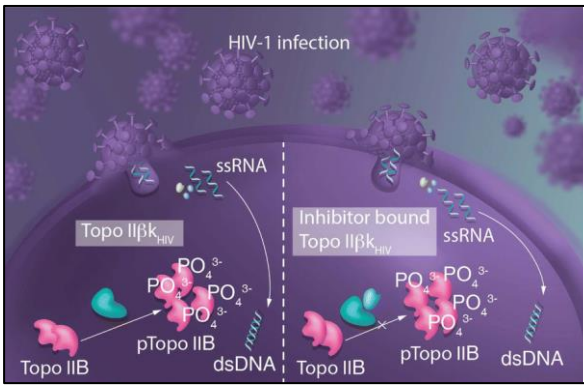
Graphical abstracts are peer reviewed alongside the article and should be submitted with the first draft. However, this does not need to be the final version – we are happy to accept a rough sketch or equivalent that will resemble the final version. The final version can then be created whilst the draft is being reviewed and finalized based on the reviewers' feedback.

Submission requirements: Authors should provide a single image or split panels in one image, ideally using font HELVETICA; size 8 points. Files should be supplied as a .jpg, .pdf or .tif file. If required, we can provide a range of design support services, from polishing an existing figure to completely creating the graphical abstract from a hand-drawn figure. Please contact pubsols@tandf.co.uk to discuss these services and the fees involved.

Before



After



Infographics

Infographics go beyond the graphical abstract and provide a more in-depth, at-a-glance overview of the information presented in the article. Infographics will appear at the end of the article PDF and online alongside the article.

Submission requirements: Please supply as a PDF and Illustrator CS5 file (if possible) 208 x 280 mm in size. The font size should be minimum 9pt.

We can offer a full range of design and creation services. Please contact pubsols@tandf.co.uk to discuss these services and the fees involved.

Videos

With more and more content being consumed in video format, we offer a number of options to help authors summarize their scientific research and journal articles through engaging videos.

Videos abstracts are short, 2–3-minute videos that provide the reader with a summary of the paper. Typically produced by the author, these can be published alongside articles free of charge. For an example video abstract, please visit www.doi.org/10.2217/fon-2017-0636.

Information Classification: General

Animated videos provide a ~90 second overview of a research paper where the article is converted into a bespoke animation with an engaging voiceover script. Videos are featured alongside the journal publication and also hosted on the *Video Journal of Biomedicine* with their own citable DOI and the video transcript and metadata. All animated videos are published free to access, even if you have not chosen our open access option.

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If you are interested in any of our options to feature a video alongside your article, please email pubsols@tandf.co.uk.

Figures, tables, boxes & supplementary materials (including videos)

Summary figures, tables and boxes are very useful, and we encourage their use in certain article types (see above section on Article types for details on which articles can include figures/tables/boxes). The author should include illustrations to condense and illustrate the information they wish to convey. Commentary that augments an article and could be viewed as 'stand-alone' should be included in a separate box. An example would be a summary of a particular trial or trial series, a case study summary or a series of terms explained. _Article_types_1

Figures, tables and boxes should be numbered consecutively according to the order in which they have been first cited in the text.

Figure/table/box guidelines

- **File submission:** All figures, tables and boxes should be **submitted as separate files**, not within the main manuscript document.
    - It is acceptable to include e.g., one table file with multiple tables included, but this should be a separate document to the main text file.
- **File format:** Figures, tables and boxes should be submitted in an **editable format** where possible. Figures that can be included without editing (e.g., photos, imaging data, etc.) can be submitted as raster files (.jpg, .png or .tif). Other figures (e.g., graph/bar charts or complex illustrations) should ideally be provided as vector files (.ai, .eps or .svg) if possible, otherwise as a .jpg, .pdf or .tif. Tables/boxes should be provided as e.g., Microsoft Word or Microsoft Excel files, and must be editable. If you are uncertain whether the format of your files is appropriate, please check with the Journal Editor.
- **Resolution:** Figure resolution should be as high as possible, ideally 300 dpi or higher for a .jpg. Images that are blurry or illegible in any way will not be accepted.
- **Font:** If possible, please use Helvetica 8pt.
- **Abbreviations:** All abbreviations used within Figures/tables/boxes should be defined in the legend (even if previously defined in the body of the manuscript).

Information Classification: General

- **Photomicrograph:** Please ensure that **scale bars** are included in figures where appropriate (e.g., photomicrographs). Symbols, arrows or letters used in photomicrographs should contrast with the background. Please explain internal scale and identify the method of staining in photomicrographs.
- **Editing of figures:** *Biotechniques* applies the Council of Science Editors recommendations for digital images, specifically:
    - No specific feature within an image may be enhanced, obscured, moved, removed, or introduced.
    - Adjustments of brightness, contrast, or color balance are acceptable if they are applied to the whole image and as long as they do not obscure, eliminate, or misrepresent any information present in the original.
    - The grouping of images from different parts of the same gel, or from different gels, fields, or exposures must be made explicit by the arrangement of the figure (e.g., dividing lines) and in the text of the figure legend.
    - If the original data cannot be produced by an author when asked to provide it, acceptance of the manuscript may be revoked.

We are able to offer a number of design services to authors, from polishing an existing figure to creating one from scratch (subject to fees). If you would be interested in learning more about this service, please contact pubsols@tandf.co.uk.

Chemical structures

If possible, please submit structures drawn in ISISDraw or ChemDraw format. However, chemical structures can be redrawn in-house. Please use the following conventions:

- Always indicate stereochemistry where necessary – use the wedge and hash bond convention for chiral centers and mark cis/trans bonds as such.
- Draw small peptides (up to five amino acids) in full; use amino acid abbreviations (Gly, Val, Leu, etc.) for larger peptides.
- Refer to each structure with a number in the text; submit a separate file (e.g., not pasted throughout the text) containing these numbered structures in the original chemical drawing package that you used.

Protocols & Software

Protocols

BioTechniques recommends authors submit concise, reproducible protocols to protocols.io. An example of such a protocol can be found here: http://bit.ly/2rPyrkL.

BioTechniques requests that protocol authors add their protocol to the *BioTechniques* collection when prompted. Protocols.io links to *BioTechniques* publications will resolve on publication.

Software

Software and associated documentation should be available on the author's web site or a suitable repository for editor and reviewer access at the time of manuscript submission. Authors are required to guarantee the availability of software and documentation for 3 full years following publication.

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Units of measurement

Measurements of length, height, weight and volume should be reported in metric units (meter, kilogram or liter) or their decimal multiples.

Temperatures should be in degrees Celsius.

Centrifuge speeds should be given in g rather than rpm.

Any other units should be reported using the International System of Units (SI) where possible.

Statistics

Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to judge its appropriateness for the study and to verify the reported results.

When possible, appropriate indicators of measurement error or uncertainty (such as confidence intervals or error bars) should be included.

Please define any statistical terms, abbreviations and symbols used.

Product brand names

- Product brand names should not appear in the Title or Summary.
- Ideally brand names should only be used once in the main paper, in parentheses following the first mention of the generic name (please give both EU and US brand names where appropriate). The generic name should then be used thereafter.
- Brand names should include a superscript copyright/trademark/registered trademark symbol as appropriate on their first mention in each section of the manuscript (abstract/body of the text/executive summary/figure footnote/table footnote).
    - It is not necessary to include a copyright/trademark/registered trademark symbol for subsequent mentions.
- When referring to a lead compound (or compounds claimed in patents) for the first time, please ensure that the name of the relevant company is given in the text.

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Our fee-based accelerated publication option provides publication of accepted articles online ahead of the print issues, within 7-9 weeks of submission. If **you are interested in this option, you can see a quote for the option during the manuscript submission process, and can select this option on submission if you would like to proceed.**

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Information Classification: General

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- Use for the purposes of monetary reward by means of sale, resale, license, loan, transfer or other form of commercial exploitation such as marketing products
- The reproduction of the article in whole in paper format, e.g., reprints

Editorial policies

Policies specific to *BioTechniques* can be found below.

Preprints

Authors submitting preprints to bioRxiv have the option to submit their work directly to *BioTechniques*. Authors can choose to submit their manuscript for consideration at *BioTechniques* through the Direct Transfer program. Authors are able to transfer their manuscript files and metadata directly from bioRxiv to the journal, saving re-entering author information during the submission process.

Material sharing

Authors are expected to make biological materials described in their article available upon reasonable request from researchers. Authors are encouraged to deposit biological materials to public repositories such as Addgene, ATCC, DNASU, Fungal Genetic Stocks Center, European Mouse Mutant Archive, EuroScarf, Knockout Mouse Project, Jackson Laboratory, Mutant Mouse Regional Resource Centers, PlasmID. Depositing with repositories enables preservation, authentication, and timely access to relevant new materials generated in publications so that future researchers to perform replication or follow-on studies.

Information Classification: General

Cell line authentication

Authors are encouraged to authenticate all cell lines used in their research efforts. *BioTechniques* specifically requires authors to check any cell lines used in their experiments against the current database of misidentified cell lines curated by the International Cell Line Authentication Committee (ICLAC) available at http://iclac.org/databases/crosscontaminations/. Any cell line appearing in this database used in an experiment in a submitted manuscript must be accompanied by recent cell line authentication data (e.g. short tandem repeat profiling) to support the proper identification of the cell line used in the experiments. In addition, reviewers and editors reserve the right to request additional cell line authentication data for all cell lines used in any experiment described in a submitted manuscript. For further information on this policy, please contact the editors.

Research Resource Identifiers (RRIDS)

BioTechniques takes part in the Resource Identification Initiative, an effort designed to provide unique identification numbers for biomedical reagents used in research. The numbers provided by the Resource Identification Initiative through their website portal are called Research Resource Identifiers (RRIDs). *BioTechniques* requests that all authors provide appropriate RRIDs for any antibodies or genetically modified organisms referenced within their manuscripts. Authors can check the Research Identification Portal (https://scicrunch.org/resources) to find the correct RRID for any specific antibody or genetically modified organism.

An example of proper antibody RRIDs citation in a manuscript is: “Using antibodies available in our laboratory, including a commercial antibody against β- tubulin (PA5–16863; Thermo Fisher Scientific, Waltham, MA; RRID: AB_10986058).”

Note that for all antibodies and other reagents, authors should now include manufacturer, location, catalog number, and RRID. For additional information on locating specific RRIDs, visit https://scicrunch.org/ or contact the editors.

Protocol submissions

General requirements

Protocols that are created in connection with the preparation of your manuscript should be uploaded to Protocols.io. Please note that we cannot accept protocols that have also been prepared for distribution by a manufacturer with a commercial product. If a protocol is available with your manuscript, be sure to include a reference and the DOI in the reference section of your article. Each protocol should be detailed and organized so that a researcher could print out the protocol and perform the experiment using only that document. Feel free to include any commentary, hints, data tracking systems, charts, etc. that you find useful when carrying out the experiments.

Protocol format

Protocols should be formatted to suit Protocols.io and include the following sections (where applicable).

Reagents

Please list all of the reagents used in performing the experiment and the vendor name and location. For reagents that are unusual or difficult to find, please also include a catalog number. Reagents that are purchased ready-to-use should be listed in this section.

Information Classification: General

Procedure

Include the title of each major step (such as tissue collection, cell lysis, neutralization, precipitation, etc.) as a heading with each task numbered below. Numbers should be continuous throughout the procedure. For example, the first heading may include steps 1-4 and the second heading steps 5-7.

- Helpful hints: Provide any commentary or hints that will help the investigator correctly perform the experiment.
- Attention: Draw attention to any critical steps with specific instructions on the correct procedure, what makes this step critical, and what to do to ensure success. Is it dependent on timing, dilution, speed, temperature, etc.?
- Rest: Please note any steps where the experiment can be stopped, the duration that it can be held (overnight, 2 h, etc.), and instructions for properly holding (4°C, with shaking, in the dark, etc.).

Figures and tables

Useful figures, graphs, charts, etc. can be used. They must be included as separate files and adhere to our figure requirements as stated above. Tables should be created in Microsoft Word and included as part of the protocol text.

Recipes

List the recipes of all solutions made in the laboratory. Reagents purchased ready-to use do not need to be listed in this category, but all purchased reagents that require modification (such as dilution or addition of β-mercaptoethanol) should be listed here.

Troubleshooting

If known, please list common problems, possible causes, and methods of correction. This can be submitted as a table or listed in the text.

Equipment

List all equipment used with the accompanying vendor name. Upon first mention in the text, also include the vendor's location (city/state and country). Include catalog numbers for equipment that may be difficult to find.

References

List all necessary references in the same format detailed above.

These are guidelines for structuring your document, but not all categories may apply. When submitting your protocol, please submit it alongside your article as a supplementary document for review.

Information Classification: General

Methods Reporting Checklist for Authors

In accordance with the guidelines that emerged from a workshop led by the NIH, aimed at enhancing the scientific rigour and reproducibility of published results (accessed here), we have taken measures to ensure that we are promoting good reporting standards. The checklist below is designed to establish if you have fulfilled the standards required by our journals. We suggest uploading a copy with your manuscript upon submission.

Please check the below and indicate if the following information is available in your manuscript (or supplementary material). In cases where you have confirmed that the stipulated information is present in your article, please detail where it can be found by providing the page/paragraph/line number. If you feel that inclusion of this information is not applicable to your study, please indicate this in the column titled N/A.

For types of studies not covered by the methods checklist below, we recommend you consult the Equator Network website to identify a suitable guideline.

General Methods	Yes – information is located on page/paragraph/line:	N/A
1. I have detailed the exact sample size (*n*) for each experimental group/condition, as a number, not a range		
2. I have explained how sample size was chosen (in terms of having enough statistical power to make inferences about the sample)		
3. For animal studies, I have included a statement about sample size estimate (NB. applicable even if no statistical methods were used)		
4. A description of the sample collection is included, enabling the reader to understand whether the samples represent technical or biological replicates (including how many animals, litters, culture, etc.)		
5. I have defined how many times the experiment was replicated		
6. I have detailed inclusion/exclusion criteria in cases where samples or animals were excluded from the analysis. I have detailed if the criteria were pre-established		

Information Classification: General

7.	I have clarified the method of randomization that was used to determine how samples/animals were assigned to experimental groups	
8.	For animal studies: I have included a statement detailing whether or not randomization was used	
9.	For animal studies: I have included a statement detailing whether or not blinding was done	
10.	I have stated the extent to which the investigator was blinded to the group allocation during the experiment and/or when assessing the outcome	

Statistical Testing	**Yes – information is located on page/paragraph/line:**	**N/A**
1. Statistical methods and measures have been defined: There is no need to describe very common tests, but more complex techniques should be described in the methods section. (For small sample sizes (n<5) descriptive statistics are not appropriate, instead plot individual data points)		
2. I have stated if tests are one-sided or two-sided		
3. Statistical test results have been included e.g., *P* values		
4. 'Center values', such as median or mean have been defined		
5. Error bars (e.g., s.d. or s.e.m. or c.i.) have been defined		
6. I have stated if the data meet the assumptions of the tests (e.g., normal distribution)		
7. I have clarified if there is an estimate of variation within each group of data and, if so, I have detailed if the variance is similar between the groups that are being statistically compared		

Information Classification: General

Reagents	Yes – information is located on page/paragraph/line:	N/A
1. I have provided evidence that the antibodies were profiled for use in the system under study (assay and species), by giving a citation, catalog number and/or clone number, supplementary information or reference to an antibody validation profile (e.g., Antibodypedia, 1DegreeBio)		
2. I have clearly identified the source of cell lines and reported if they were recently authenticated (e.g., by STR profiling) and tested for mycoplasma contamination		

Animal Models†	Yes – information is located on page/paragraph/line:	N/A
1. I have reported the species, strain, weight, sex and age of animals		
2. For experiments involving live vertebrates: I have either ticked to indicate that the necessary protocols have been followed in the Author Disclosure form or I have included a statement of compliance with ethical regulations and identified the committee(s) approving the experiments in my paper		

† We recommend consulting the ARRIVE guidelines to ensure that other relevant aspects of animal studies are adequately reported.

Human Studies†‡	Yes – information is located on page/paragraph/line:	N/A
1. I have identified the committee(s) approving the study protocol		
2. I have included a statement confirming that informed consent was obtained from all subjects/ indicated that this is the case in the Author Disclosure form		

Information Classification: General

3. I have reported the clinical trial registration number (at ClinicalTrials.gov or equivalent)		

† For Phase II and III randomized controlled trials, we recommend that you refer to the CONSORT statement.
‡For tumor marker prognostic studies, we recommend that you follow the REMARK reporting guidelines.

Data and material sharing†	**Yes – information is located on page/paragraph/line:**	**N/A**
1. I have stipulated in the manuscript that all datasets on which the conclusions of the report rely are available on request		
2. I have provided accession codes for data that has been deposited in public repositories		
3. If software has been used in the study: I have included information about the type of software and a statement describing if the software is available and how it may be obtained		

†We encourage the deposition of data to a discipline-specific, community-recognized repository where one exists, or a generalist repository if no suitable specific resource is available. Repositories can be found via sites such as re3data.org.

Health economic evaluations	**Yes, see separate checklist:**	**N/A**
1. I have followed the separate CHEERS† checklist, available here.		

† Husereau D, Drummond M, Petrou S *et al*., on behalf of the CHEERS Task Force. Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement. *BMJ* 346, f1049 (2013).

Observational studies	**Yes, see separate checklist:**	**N/A**
1. I have followed the separate STROBE† checklist, available here.		

† von Elm E, Altman DG, Egger M, Pocock SJ, Gotzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. BMJ. 335(7624), 806–808 (2007).

Systematic reviews & meta-analyses	**Yes, see separate checklist:**	**N/A**

Information Classification: General

1. I have followed the separate checklist established by PRISMA†, available here.

† Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ* 339, b2535 (2009).

PRISMA Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	

Information Classification: General

Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	

Information Classification: General

Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097 For more information, visit: **www.prisma-statement.org**.

Information Classification: General

STROBE Statement

Checklist of items that should be included in reports of observational studies

	Item No	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported
Objectives	3	State specific objectives, including any prespecified hypotheses
Methods		
Study design	4	Present key elements of study design early in the paper
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group
Bias	9	Describe any efforts to address potential sources of bias
Study size	10	Explain how the study size was arrived at
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why

Information Classification: General

Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding
		(*b*) Describe any methods used to examine subgroups and interactions
		(*c*) Explain how missing data were addressed
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy
		(*e*) Describe any sensitivity analyses
Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed
		(b) Give reasons for non-participation at each stage
		(c) Consider use of a flow diagram
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders
		(b) Indicate number of participants with missing data for each variable of interest
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time
		Case-control study—Report numbers in each exposure category, or summary measures of exposure
		Cross-sectional study—Report numbers of outcome events or summary measures
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included
		(*b*) Report category boundaries when continuous variables were categorized
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period

Information Classification: General

Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses
Discussion		
Key results	18	Summarise key results with reference to study objectives
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence
Generalisability	21	Discuss the generalisability (external validity) of the study results
Other information		
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Information Classification: General