

EASE Guidelines for Authors and Translators of Scientific Articles to be Published in English*

European Association of Science Editors (EASE)



To make international scientific communication more efficient, research articles and other scientific publications, should be COMPLETE, CONCISE, and CLEAR. These generalized guidelines are intended to help authors, translators, and editors, to achieve this aim.

First of all:

- Do not begin drafting the whole paper until you are sure that your findings are reasonably firm and complete (O'Connor 1991), allowing you to draw **sensible and reliable conclusions**.
- Before you start writing, preferably **choose the journal** to which you will submit your manuscript. Make sure that the journal's readership corresponds to your own target audience. Get a copy of the journal's instructions to authors and plan the article to fit the journal's preferred format in terms of overall length, number of figures required/allowed, etc.

Manuscripts should be COMPLETE, i.e. no necessary information should be missing. Remember that **information is interpreted more easily if it is placed where readers expect to find it** (Gopen & Swan 1990). For example, the following information ought to be included in experimental research articles.

- **Title:** should be unambiguous, understandable to specialists in other fields, and must reflect the content of the article. Be specific, not general or vague (O'Connor 1991). If relevant, mention in the title the study period and location, the international scientific name of the studied organism or the experimental design (e.g. case study or randomized controlled trial). Information given in the title does not need to be repeated in the abstract (as they are always published jointly), although overlap is unavoidable.
- **List of authors,** i.e. all people who contributed substantially to study planning, data collection or interpretation of results **and** wrote or critically revised

the manuscript **and** approved its final version (ICMJE 2010). The authors listed first should be those who did most. Names of authors must be supplemented with their **affiliations** (during the study) and the **present address** of an author for correspondence. E-mail addresses of all authors should be provided, so that they can be contacted easily.

- **Abstract:** briefly explain why you conducted the study (BACKGROUND), what question(s) you aimed to answer (OBJECTIVES), how you performed the study (METHODS), what you found (RESULTS: major data, relationships), and your interpretation and main consequences of your findings (CONCLUSIONS). The abstract must **reflect the content** of the article, as for most readers it will be the major source of information about your study. You must **use all keywords** within the abstract, to facilitate on-line searching for your article by those who may be interested in your results (many databases include only titles and abstracts). In a **research report**, the abstract should be **informative**, including actual results. Only in **reviews**, meta-analyses, and other wide-scope articles, should the abstract be **indicative**, i.e. listing the major topics discussed but not giving outcomes (CSE 2006). Do not refer in the abstract to tables or figures, as abstracts are also published separately. References to the literature are also not allowed unless they are absolutely necessary (but then you need to provide detailed information in brackets: author, title, year, etc.). Make sure that all the information given in the abstract also appears in the main body of the article. (*See Appendix: Abstracts*)
- **List of additional keywords** (if allowed by the editors): include all relevant scientific terms that are absent from the title and abstract. Keep the keywords specific. Add more general terms if your study has interdisciplinary significance (O'Connor 1991). In medical texts, use vocabulary found in the MeSH Browser.
- **List of abbreviations** (if required by the editors):

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define all abbreviations used in the article, except those obvious to non-specialists.

- **Introduction:** explain why the study was needed and specify your **research objectives** or the question(s) you aimed to answer. Start from more general issues and gradually focus on your research question(s).
- **Methods:** describe in detail how the study was carried out (e.g. study area, data collection, criteria, origin of analysed material, sample size, number of measurements, age and sex of participants, equipment, data analysis, statistical tests, and software used). All factors that could have affected the results need to be considered. If you cite a method described in a non-English or inaccessible publication, explain it in detail in your manuscript. Make sure that you comply with the ethical standards (e.g. WMA 2008) in respect of patient rights, animal testing, environmental protection, etc.
- **Results:** present the new results of your study (published data should not be included in this section). All tables and figures must be mentioned in the main body of the article, and numbered in the order in which they appear in the text. Make sure that the statistical analysis is appropriate (e.g. Lang 2004). Do not fabricate or distort any data, and do not exclude any important data; similarly, do not manipulate images to make a false impression on readers. Such data manipulations may constitute **scientific fraud** (see COPE flowcharts).
- **Discussion:** answer your research questions (stated at the end of the introduction) and compare your new results with published data, as objectively as possible. Discuss their limitations and highlight your main findings. Consider any findings that run contrary to your point of view. To support your position, use **only methodologically sound evidence** (ORI 2009). At the end of the discussion or in a separate section, emphasize your major conclusions and the practical significance of your study.
- **Acknowledgements:** mention all people who contributed substantially to the study but cannot be regarded as co-authors, and acknowledge all sources of funding. The recommended form is: "This work was supported by the Medical Research Council [grant number xxxx]". If no specific funding was provided, use the following sentence: "This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors." (RIN 2008). If relevant, disclose to the editors any other conflicts of interest, e.g. financial or personal links with the manufacturer or with an organization that has an interest in the submitted manuscript (Goozner et al. 2009). If you reproduce previously published materials (e.g. figures), ask the copyright owners for permission and mention them in the captions or in the acknowledgements. If you were helped by a language professional (e.g. author's

editor or translator), a statistician, data collectors, etc., you should acknowledge their assistance for the sake of transparency (ICMJE 2010, Graf et al. 2009). It must be clear that they are not responsible for the final version of the article. You must ensure you have the consent of all the people named in this section. (*See Appendix: Ethics*)

- **References:** make sure that you have provided sources for all information extracted from other publications. In the list of references, include all data necessary to find them in a library or in the Internet. For non-English publications, give the **original title** (transliterated according to English rules if necessary), whenever possible followed by its translation into English in square brackets (CSE 2006). Avoid citing inaccessible data. Do not include unpublished data in the list of references – if you must mention them, describe their source in the main body of the article, and obtain permission from the producer of the data to cite them.
- **A different article structure** may be more suitable for theoretical publications, review articles, case studies, etc.
- Some publications include also an abstract or a longer **summary in another language**. This is very useful in many fields of research.
- Remember to comply with the journal's **instructions to authors** in respect of abstract length, style of references, etc.

Write **CONCISELY** to save the time of referees and readers.

- **Do not include information that is not relevant to your research question(s)** stated in the introduction. The **number of cited works should not be excessive** – do not give many similar examples.
- **Do not copy** substantial parts of your previous publications and do not submit the same manuscript to more than one journal at a time. Otherwise, you may be responsible for **redundant publication** (see COPE flowcharts). This does not apply to preliminary publications, such as conference abstracts (O'Connor 1991). Moreover, **secondary publications** are acceptable if intended for a completely different group of readers (e.g. in another language or for specialists and the general public) and you have received approval from the editors of both journals (ICMJE 2010).
- Information given in one section preferably **should not be repeated** in other sections. Obvious exceptions include the abstract, the figure legends, and the concluding paragraph.
- Consider whether all tables and figures are necessary. Data presented in tables should not be repeated in figures (or vice versa). Long lists of data should not be repeated in the text.
- Captions to tables and figures must be **informative**

but not very long. If similar data are presented in several tables or several figures, then the format of their captions should also be similar.

- Preferably **delete obvious statements** (e.g. “Forests are very important ecosystems.”) and other redundant fragments (e.g. “It is well known that...”).
- If a **long scientific term** is frequently repeated, define its abbreviation at first use in the main body of the article, and later apply it consistently.
- Express your doubts if necessary but **avoid excessive hedging** (e.g. write “are potential” rather than “may possibly be potential”). However, **do not overgeneralize** your conclusions.
- Unless required otherwise by the editors, **use numerals for all numbers**, i.e. also for one-digit whole numbers, **except for zero, one** (if without units), **and other cases where misunderstanding is possible**, e.g. at the beginning of a sentence or before abbreviations containing numbers (CSE 2006).

Write CLEARLY to facilitate understanding – make the text readable.

Scientific content

- **Clearly distinguish your original data and ideas** from those of other people and from your earlier publications – provide citations whenever relevant. **Preferably summarize or paraphrase** text from other sources. This applies also to translations. When copying text literally (e.g. a whole sentence or longer text), put it in inverted commas (e.g. ORI 2009, Kerans & de Jager 2010). Otherwise you could commit **plagiarism** (see COPE flowcharts) or self-plagiarism.
- Make sure that you are using **proper English scientific terms**, preferably on the basis of texts written by native English speakers. Literal translations are often wrong (e.g. so-called *false friends* or non-existent words invented by translators). If in doubt, **check the definition** in an English dictionary, as many words are used incorrectly (e.g. *trimester* with reference to animal pregnancy, see Baranyiová 1998). You can also search for a word or phrase in Wikipedia, for example; then compare the results in your native language and in English, and see if the meaning of putative equivalents is truly the same.
- If a word is used mostly in translations and only rarely in English-speaking countries, consider replacing it with a commonly known English term with a similar meaning (e.g. *plant community* instead of *phytocoenosis*). If a scientific term has no synonym in English, then define it precisely and suggest an acceptable English translation.
- **Define every uncommon or ambiguous scientific term** at first use. You can list its synonyms, if there are any (to aid in searching), but later employ only one of them consistently (to prevent confusion). Formal

nomenclature established by scientific organizations should be preferred.

- **Avoid unclear statements**, which require the reader to guess what you meant. (*See Appendix: Ambiguity*)
- When reporting percentages, make clear **what you regard as 100%**. When writing about correlations, relationships, etc., make clear which values you are comparing with which.
- **Système International (SI) units and Celsius degrees** are generally preferred. If necessary, abbreviate litre as L (CSE 2006), to avoid confusion with the number 1.
- Unlike many other languages, English has a **decimal point** (not comma). In numbers exceeding 4 digits to the right or left of the decimal point, use **thin spaces** (not commas) between groups of 3 digits in either direction from the decimal point (CSE 2006).
- To denote centuries, months, etc., **do not use capital Roman numerals**, as they are rare in English. Because of differences between British and American date notation (see below), preferably denote months as whole words or their first 3 letters.
- If lesser-known **geographic names** are translated, the original name should also be mentioned, if possible, e.g. “in the Kampinos Forest (Puszcza Kampinowska)”. Some additional information about location, climate, etc., may also be useful for readers.
- Remember that the text will be **read mainly by foreigners**, who may be unaware of the specific conditions, classifications or concepts that are widely known in your country; therefore, addition of some explanations may be necessary (Ufnalska 2008). For example, the common weed *Erigeron annuus* is called *Stenactis annua* in some countries, so in English texts the internationally approved name should be used, while its synonym(s) should be added in brackets.

Text structure

- **Sentences generally should not be very long. Their structure should be relatively simple**, with the subject located close to its verb (Gopen & Swan 1990). For example, avoid abstract nouns and write “X was measured...” instead of “Measurements of X were carried out...”. (*See Appendix: Simplicity*) Do not overuse passive constructions (e.g. Norris 2011). When translating, modify sentence structure if necessary to convey the message correctly or more clearly (Burrough-Boenisch 2003).
- **The text should be cohesive, logically organized**, and thus easy to follow. (*See Appendix: Cohesion*)
- Each paragraph preferably should start with a topic sentence, and the next sentences fully develop the topic.
- In contrast to some other languages, English allows parallel constructions, as they facilitate understanding. For example, when comparing similar data, you can



write “It was high in A, medium in B, and low in C”, rather than “It was high in A, medium for B, and low in the case of C”.

- **Make figures and tables easily understandable** without reference to the main body of the article. Omit data that are not informative (e.g. delete a column if it contains the same values in all rows – you can write about it in a footnote instead). Apply abbreviations only if necessary for consistency or if there is not enough room for whole words. In captions or footnotes, define all abbreviations and symbols that are not obvious (e.g. error bars may denote standard deviation, standard error or confidence intervals). **Remember to use decimal points** (not decimal commas) and **provide axis labels and units** wherever needed.
- Consider using **text-tables** when presenting a small set of data (Kozak 2009). (*See Appendix: Text-tables*)
- In long lists (of abbreviations, etc.), preferably separate individual items by **semicolons (;)**, which are intermediate between commas and full stops.

Language matters

- Wherever scientific terms are not necessary, preferably use **commonly known words**. However, avoid colloquial and idiomatic expressions, as well as phrasal verbs (e.g. *find out*, *pay off*), which are often difficult to understand by non-native speakers of English (Geercken 2006).
- **Define abbreviations** when they first appear in the main body of the article (if they may be unclear to readers). **Do not use too many different abbreviations**, as the text would be hard to understand. Do not abbreviate terms that are used only rarely in your manuscript. **Avoid abbreviations in the abstract.**
- In general, use the **past tense** when describing how you performed your study and what you found or what other researchers did. Preferably use the **present tense** in general statements and interpretations (e.g. statistical significance, conclusions) or when writing about the content of your article, especially tables and figures (Day & Gastel 2006).
- **Do not write about yourself “the author(s)”**, as this is ambiguous. Instead, write “we” or “I” if necessary, or use expressions like “in this study”, “our results” or “in our opinion” (e.g. Hartley 2010, Norris 2011). Note that you should write “this study” only if you mean your new results. If you mean a publication mentioned in a previous sentence, write “that study”. If you mean authors of a cited publication, write “those authors”.
- Remember that in scientific texts the word **“which”** should be used in non-defining clauses, while **“that”** in defining clauses (i.e. meaning “only those that”).
- When using **equivocal words**, make sure that their meaning is obvious from the text context. Check if all

verbs agree in number with their subjects and if the **references for all pronouns are clear** (this is crucial in translated texts). Note that some nouns have **irregular plurals**. (*See Appendix: Plurals*)

- Read the text aloud to check punctuation. All **intonation breaks** necessary for proper understanding should be denoted with commas or other punctuation marks (e.g. note the difference between “no more data are needed” and “no, more data are needed”).
- Be **consistent in spelling**. Follow either British or American rules for spelling and date notation (e.g. “21 Sep 2009” in British, or “Sep 21, 2009” in American English). (*See Appendix: Spelling*) Check whether the target journal uses American or British spelling, and then use that setting on your word and grammar check.
- Ask a thoughtful colleague to read the whole text, in order to see if there are any ambiguous fragments.

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References and further reading

- Baranyiová E. 1998. Misleading words or nobody is perfect. *European Science Editing* 24(2):46. Available from http://www.ease.org.uk/pdfguidelines/European_Science_Ending_1998.pdf
- Beverly P. 2011. Word macros for writers and editors. Available from <http://www.archivepub.co.uk/TheBook>
- Bless A, Hull E. 2008. Reader-friendly biomedical articles: how to write them! 3rd ed. Alphen a/d Rijn: Van Zuiden Communication.
- Burrough-Boenisch J. 2003. Editing texts by non-native speakers of English. In: *European Association of Science Editors. Science editors' handbook*. Maisonneuve H, Enckell PH, Polderman A, Thapa R, Johnson-Vekony M, editors. Available from: <http://www.ease.org.uk/handbook/index.shtml>
- Chipperfield L, Citrome L, Clark J, David FS, Enck R, Evangelista M, et al. 2010. Authors' Submission Toolkit: a practical guide to getting your research published. *Current Medical Research & Opinion* 26(8):1967-1982. Available from <http://www.cmjournal.com/ipi/ih/MPIP-author-toolkit.jsp>
- [COPE flowcharts] Committee of Publication Ethics flowcharts. Available from <http://www.publicationethics.org/resources/flowcharts>
- [CSE] Council of Science Editors, Style Manual Committee. 2006. *Scientific style and format: the CSE manual for authors, editors, and publishers*. 7th ed. Reston, VA: Council of Science Editors.
- Day RA, Gastel B. 2006. *How to write and publish a scientific paper*. 6th ed. Cambridge: Cambridge University Press.
- do Carmo GMI, Yen C, Cortes J, Siqueira AA, de Oliveira WK, Cortez-Escalante JJ, et al. 2011. Decline in diarrhea mortality and admissions after routine childhood rotavirus immunization in Brazil: a time-series analysis. *PLoS Medicine* 8(4): e1001024. Available from <http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001024>

- [EASE] European Association of Science Editors. 2003-2007. Science editors' handbook. Maisonneuve H, Enckell PH, Polderman A, Thapa R, Johnson-Vekony M, editors. Available from: <http://www.ease.org.uk/handbook/index.shtml>
- [EMAME] Eastern Mediterranean Association of Medical Editors. 2006. Manual for editors of health science journals. Available in Arabic, English, and French from <http://www.emro.who.int/emame/index.htm>
- EQUATOR Network. Available from: <http://www.equator-network.org/home/>
- Geercken S. 2006. Challenges of (medical) writing for the multilingual audience. *Write Stuff* 15(2):45-46. Available from: http://www.emwa.org/JournalPDFs/J_V15_I2.pdf
- Goodman NW, Edwards MB. 2006. *Medical writing: a prescription for clarity*, 3rd ed. Cambridge: Cambridge University Press.
- Goozner M, Caplan A, Moreno J, Kramer BS, Babor TF, Husser WC. 2009. A common standard for conflict of interest disclosure in addiction journals. *Addiction* 104:1779-1784. Available from <http://www3.interscience.wiley.com/journal/122637800/abstract>
- Gopen GD, Swan JA. 1990. The science of scientific writing: if the reader is to grasp what the writer means, the writer must understand what the reader needs. *American Scientist* 78(6):550-558. Available from: <http://www-stat.wharton.upenn.edu/~buja/sci.html>
- Graf C, Battisti WP, Bridges D, Bruce-Winkle V, Conaty JM, Ellison JM, et al., for the International Society for Medical Publication Professionals. 2009. Good publication practice for communicating company sponsored medical research: the GPP2 guidelines. *BMJ* 339:b4330. Available from http://www.bmj.com/cgi/content/full/339/nov27_1/b4330
- Gustavii B. 2008. *How to write and illustrate a scientific paper*. 2nd ed. Cambridge, New York: Cambridge University Press.
- Hartley J. 2008. *Academic writing and publishing: a practical handbook*. Abingdon: Routledge.
- Hartley J. 2010. Citing oneself. *European Science Editing* 36(2):35-37. Available from http://www.ease.org.uk/pdfese/ESE_may10.pdf
- [ICMJE] International Committee of Medical Journal Editors. 2010. Uniform requirements for manuscripts submitted to biomedical journals: writing and editing for biomedical publication. Available from http://www.icmje.org/urm_main.html
- Kerans ME, de Jager M. 2010. Handling plagiarism at the editor's desk. *European Science Editing* 36(3): 62-66. http://www.ease.org.uk/pdfese/ESE_aug10.pdf
- Kozak M. 2009. Text-table: an underused and undervalued tool for communicating information. *European Science Editing* 35(4):103. Available from: <http://www.ease.org.uk/pdfesearticlesnov09/essays%20101-105.pdf>
- Lang T. 2004. Twenty statistical errors even YOU can find in biomedical research articles. *Croatian Medical Journal* 45(4):361-370. Available from <http://www.cmj.hr/2004/45/4/15311405.htm>
- [MeSH Browser] Medical Subject Headings Browser. Available from: <http://www.nlm.nih.gov/mesh/MBrowser.html>
- NECOBELAC. Topic map scheme for scientific publication. Available from http://www.necobelac.eu/documents/TopicMapScheme_Scientific_Publication.pdf
- Norris CB. 2009. *Academic writing in English*. Helsinki: University of Helsinki. Available from <http://www.helsinki.fi/kksc/language.services/AcadWrit.pdf>
- Norris C. 2011. The passive voice revisited. *European Science Editing* 37(1):6-7. Available from http://www.ease.org.uk/pdfese/ESE_feb11.pdf
- O'Connor M. 1991. *Writing successfully in science*. London: Chapman & Hall.
- [ORI] Office of Research Integrity. 2009. *Avoiding plagiarism, self-plagiarism, and other questionable writing practices: a guide to ethical writing*. Available from <http://ori.hhs.gov/education/products/plagiarism/0.shtml>
- Retraction Watch. Available from <http://retractionwatch.wordpress.com/>
- [RIN] Research Information Network. 2008. Acknowledgement of funders in journal articles. Available from: <http://www.rin.ac.uk/our-work/research-funding-policy-and-guidance/acknowledgement-funders-journal-articles>
- Scientific Red Cards. Available from <http://www.scientificredcards.org/>
- Seifert KA, Crous PW, Frisvad JC. 2008. Correcting the impact factors of taxonomic journals by Appropriate Citation of Taxonomy (ACT). *Persoonia* 20:105. Available from <http://www.persoonia.org/Issue/20/08.pdf>
- Strunk WJr, White EB. 2000. *The elements of style*. 4th ed. New York: Macmillan.
- Tufte ER. 2001. *The visual display of quantitative information*, 2nd ed. Cheshire, CT: Graphics Press.
- Ufnalska S. 2008. Abstracts of research articles: readers' expectations and guidelines for authors. *European Science Editing* 34(3):63-65. Available from <http://www.ease.org.uk/pdfesearticles/Articlesaug08p63-9.pdf>
- [WMA] World Medical Association. 2008. Declaration of Helsinki – ethical principles for medical research involving human subjects. Available in English, Spanish, and French from <http://www.wma.net/en/30publications/10policies/b3/>