

Manuscript Writing

Section Editor:

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Help, I can't shorten my abstract! Oh yes you can! (Part 1 of 2)

Abstracts are perhaps the most important part of a manuscript because they are often the only part that is read and used as an information source. They are also used by readers (consciously or not) to decide whether to read the full article, and editors often use the abstract to determine whether they will send out a manuscript for peer review. The abstract therefore serves not only as an essential information source but also as an advertisement for your manuscript and for you and the other authors.

This is why abstracts need to be complete, concise, and interesting. This is complicated by the strict length and format limitations for abstracts. Typically, 200–250 words are allowed (even less sometimes for a conference abstract). Also, more and more journals are requiring structured abstracts, which can add to the required content. To make matters worse, or at least more complicated, the CONSORT guidelines for abstracts (<http://www.consort-statement.org/extensions/data/abstracts/>) insist on including information that further increases the word count. Add to that the demands of marketing and legal departments, and squeezing everything everybody wants into the abstract becomes a delicate and complicated balancing act. An abstract is certainly not something that can be dashed off at the last minute.

So, what's a medical writer or editor to do? One thing that must not be done is to exceed the word limit. And, for structured abstracts, yes, that word limit includes the headings. On-line manuscript submission systems will not allow you to surpass the word limit, and editors will otherwise reject a manuscript with an abstract that is too long.

This is the first of two articles that shows you how to shorten your abstract. This first article describes how to shorten abstracts by eliminating unnecessary content and using plain language. The second article will describe how to use linguistic devices to reduce the word count. The accent of these two articles is on

preparing informational and descriptive abstracts for publications, but these considerations also apply to conference abstracts.

Include the information needed to support your main conclusion

Generally, the majority of an abstract should be the methods and results section. Avoid wasting space in the abstract with long background, objective, or conclusion sections. In some cases, as in an unstructured abstract, the background information can be deleted; if readers want to know about the background of the study, they can read the introduction in the main text. A good rule of thumb is that the abstract should be about 10–20% background, 30% methods, 40% results, and 10–20% conclusions.

Work backward from the conclusion. Keep in mind that the abstract must be able to stand alone without reference to the text. Therefore, present the key message or messages in the conclusion and the results to support those messages. Get to the point: *What is essential?* Eliminate anything that is not essential. Then, include the methods that were used to obtain these results, but do not go into detail. For example:

- *Antibody concentrations were measured on day 28 by enzyme-linked immunosorbent assay* is sufficient without giving any more details of the assay.
- You can also say *Adverse events were recorded up to day 56* and not go into more detail about the recording of relatedness to the treatment, intensity, or the analysis of laboratory measures.
- *The samples were fixed in formaldehyde, dehydrated, and analysed by scanning electron microscopy* can be replaced with *Samples were examined by scanning electron microscopy*.

Sometimes, a writer will be pressured by the authors or the marketing department to squeeze some non-essential messages into the abstract. Explain to them

Table 1: Common unnecessary words used in abstracts and their replacements

Replace	With
A bigger/higher/larger or lower/smaller + amount/degree/number	More/less
A decreased/increased number	Fewer/more
A higher/lower rate	Faster/slower
A total of seven	Seven
Above the normal range	Elevated
All of	All
Are/was/were able	Can/could
As a result of	Because of
At all times	Always or delete
At regular intervals	Regularly
At the same time that	While
Based on the fact that	Because, based on
Both of these	Both
Bring about	Cause
By means of	Using
Classified into groups	Classified
Compare and contrast	Compare
Connecting words: therefore, thus, however, moreover, consequently, nevertheless, hence	Delete when possible
Considered to be	Delete
Despite the fact that	Although
During the course of	During, while
First(ly), second(ly), finally/etc.	Delete
For the purpose of	To
Found to be	Is
Give cause to	Justify
Great/large majority	Most/many
Had an effect on	Influenced
Has been found to be/is found to be	Was/is
Has the ability to/is able to	Can
In a considerable proportion of	In many
In conclusion, in summary	Delete when possible
In excess of	Higher than
In no case(s)	Never
In order to	To
In spite of	Despite
In the absence of	Without
In the range of	About
Is an important factor in	Delete
Is currently	Is
Is seen as	Is
Known to	Delete
Known to participate in	Participates in
Male/female children	Boys/girls
Male/female subjects	Men/women
Mix together	Mix
On the basis of	Based on, because
Outside the normal range	Abnormal
Past experience/history	Experience/history
Plays an important role	Contributes to or delete
Prior to	Before

*Continued*Table 1: *Continued*

Replace	With
Seem to be	Seem
Subsequent to	After
The fact that	Because, that or delete
The majority of	Most/many
The minority of	Few
Time interval	Interval
Time period, period of time	Period
Time schedule	Schedule
Under/over the age of	Younger/older than
Using a combination of	By combining
Very, extremely	Delete
Virtually	Delete
Whether or not	Whether
Widely/commonly held/ believed/thought/ considered that	Delete
With the exception	Except (for)

that the reader can always read the main text for these additional messages, and remind them that the abstract absolutely cannot go over the word limit. (This may be different for abstracts written for a conference, where marketing considerations may take precedence and statements elsewhere in the abstract must be sacrificed.)

Finally, use the CONSORT Extension for Abstracts (<http://www.consort-statement.org/extensions/data/abstracts/>) as a guideline for what should be included in the abstract, but remember that it is a guideline and not a law; do your best to squeeze everything on their list into the abstract, but, in the end, use your own judgment about what needs to be included.

Avoid repetition

If you mention some detail in the title, methods section, or in the objective, do not say it again. For example:

- If your title says: ...XXX: *A randomized, parallel-group, placebo-controlled study*, you do not need to repeat it in the methods.
- If you say that the antibody concentration was measured by enzyme-linked immunoassay in the methods section, you do not need to say in the results that *The enzyme-linked immunoassay showed that antibody concentrations were ...*. Simply say *Antibody concentrations were....*
- If you say in the method that *Adults 18 to 55 years of age were immunized ...* it is not necessary to say in the objective *The study was intended to*

assess the effects of the vaccine in adults 18 to 55 years of age.

Eliminate unnecessary words

Table 1 lists some common unnecessary words used in abstracts (indeed in all our texts) and their replacements.

Avoid meaningless or useless expressions and preliminaries

Wherever possible, cut out words and expressions that add nothing. Examples:

- *Previous studies of healthy aging have shown a strong relation between WML and cognitive decline* can be replaced with *WML strongly correlates with cognitive decline in aging healthy adults.*
- Delete *In this paper, we discuss...* This kind of meaningless preamble often appears in academic papers but should be avoided.
- *The objective of this study was to examine...* can be replaced with *We examined...* or *This study examined...*
- Sentences that start with phrases explaining that a certain fact is well-known or well-accepted can and should be avoided. Just say what is. For example, the following can all be deleted: *It is well known that...*, *Many studies have shown that...*, and *Several lines of evidence indicate that...*
- You can generally eliminate known, as in... *patients with known asthma were included.*
- Instead of *We were able to show that...* just say *We showed that...*, but the latter is usually redundant anyway, as it is usually used to introduce a result, and only the result should be given: *We were able to show that mean systolic blood pressure was decreased by 22 ± 11 mm Hg...* is only saying *Mean systolic blood pressure decreased by 22 ± 11 mm Hg...*

Avoid sentences that start with 'it is/was' or 'there are/were'

You can almost always rephrase sentences that start in this way, and they are best avoided, not only in abstracts, but also in any text. They almost always end up creating a complex and wordy sentence. Examples:

- *It is known that oestrogen is a steroid hormone...* can be replaced with *Oestrogen is a steroid hormone...*

- *There were 10 patients who had severe adverse events in the treated group* can be replaced with *10 (or Ten) patients in the treated group had severe adverse events.*
- *Under ibuprofen, there was a much earlier onset of pain relief than under...* can be replaced with *Pain relief occurred much earlier under ibuprofen than...*
- *There was an improvement in the patient's condition on day 4* can be replaced with *The patient's condition improved on day 4.*

Eliminate 'show/reveal/demonstrate/found' in describing results

Examples:

- *Showed an increase* and *were found to increase* can be replaced with *increased.*
- *The analysis revealed an improvement in clinical response* can be replaced with *The clinical response improved.*

Avoid unnecessary negative results

Including some negative results may be essential, but others can be omitted without changing the conclusions. Example:

- Delete *Rates of adverse events were similar in the subjects receiving the vaccine and subjects receiving placebo.* This is unnecessary information. For an abstract, the important information may be only treatment-related serious adverse events.

When describing things that you did not do or negative results, use constructions without 'not'

Examples:

- *Patients with diabetes mellitus were excluded instead of... not included.*
- *Resuscitation failed in 20 patients instead of... did not succeed... or... was not successful...*

Avoid multiple hedges

Multiple hedges, also known as multiple qualifications, are often used to avoid saying that you are sure of something and are often included under pressure from legal departments or because scientists are often taught to leave the door open to future changes in perspective or evidence that

contradicts a conclusion. Do your best to reduce these. Example:

- These *preliminary* results suggest the *possibility* that the drug *might* be effective at reducing the incidence of the disease in *some* populations, *although further studies are needed to confirm this* can be replaced with 'These results suggest that the drug will reduce the incidence of the disease.'

Do not include references

References are generally not allowed and should be avoided in abstracts for manuscripts.

When giving demographic results for which there are only two alternatives (e.g. men/women, smoker/non-smoker), give the results for only one.

Example:

- 240 patients were enrolled. 56.3% were women; 27.9% were smokers.

Use shorter words when the permitted abstract length is given in characters and not words

Whereas journals usually specify the permitted abstract length in words, you may find that the instructions for conference abstracts stipulate a maximum number of characters. This means that the length of words is important, in addition to the different ways of shortening word count. You should therefore write the abstract first

concentrating on conciseness and not on using short words, then go through it to see where you can use a shorter word. Don't worry if it initially seems too simple to you. We are too used to hearing polysyllabic words where one or two syllables are good enough. But if you really feel that you have gone too far or think you may have oversimplified or not captured the meaning you want, check things out with a colleague.

Examples:

- *use* instead of *utilize*
- *see* instead of *encounter*
- *do* instead of *perform*, *execute* or *conduct*
- *before* instead of *prior to*
- *stop* instead of *terminate*
- *halved* instead of *divided into two equal parts*

The list is, of course, endless. You can put the Word Thesaurus (CTRL + SHIFT + 7) to good use here.

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