

Paragraphing (Part 1 of 2)

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Abstract

The purpose of paragraphing is to make text understandable and easy to read, and to help you tell your story effectively. Paragraphing is difficult because the purpose of the documents we produce and their readership are diverse. To make matters worse, little guidance is given in school and during higher education. Paragraphing is not governed by standard rules; some conventions apply but often are – or have to be – ignored in scientific and medical texts. This is the first of two articles on paragraphing and deals with basic issues that face medical writers and editors. The second article will look at developing paragraphs from ideas when you plan a document.

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Paragraphing is not easy. Most of us had little guidance on it in school and higher education, and guidance in books and on the Internet usually doesn't provide much more help than 'not-too-long-not-too-short-and-only-one-idea-per-paragraph'. This guidance also doesn't usually cover the 'special needs' that we often find in the type of documents written by medical writers. Most regulatory documents, for example, are highly structured and leave little room for the type of paragraphing required in a scientific paper. Likewise, in medical communications documentation you often deliberately ignore conventions that you observe elsewhere.

Paragraphing is simply how you split up your text into manageable and logical chunks. How you do it is determined by the type of document you are writing and your audience. As with any other aspect of writing, your target is the reader – reviewer, patient, physician – and your approach to writing must make them want to read on and not give up on your text. Their expectations with regard to paragraphing will also be different if they are reading a scientific paper, Clinical Overview, package leaflet, Periodic Safety Update

Report, or informational booklet on diabetes handed out after diagnosis.

Medical writers and editors are often required to work on a huge range of documents of different styles for different audiences. These documents require different levels of language, precision, and paragraphing. The major split in our field is between regulatory and non-regulatory documentation. But even within a single document, some sections can be paragraphed in the classic manner, while this can be very difficult or inappropriate in other sections.

Paragraphs are a type of macropunctuation

If you ask when a comma is appropriate, most people will say 'when you need a pause in a sentence or when a new clause starts'. Ask the same about when to start a new paragraph, and they will say 'when you need to give the reader a rest or start a new idea'. This means that paragraphing has a similar function to punctuation, but it is 'macropunctuation': punctuation sends out messages to the reader to create meaning by splitting up the words in a sentence, while paragraphing groups sentences with logical breaks to ease reading and help understanding.

Paragraphs should be immediately visible

Separate paragraphs on a page should be immediately visible. In regulatory documentation, such as clinical study protocols and reports, this can be achieved by very simple devices, usually by inserting an empty line between paragraphs or by indenting the first line of a paragraph by about 2 cm, with or without an empty line in between. The devices used must be consistent throughout the document. In regulatory documentation, patient information materials and scientific articles, content always takes precedence over visual aspects.

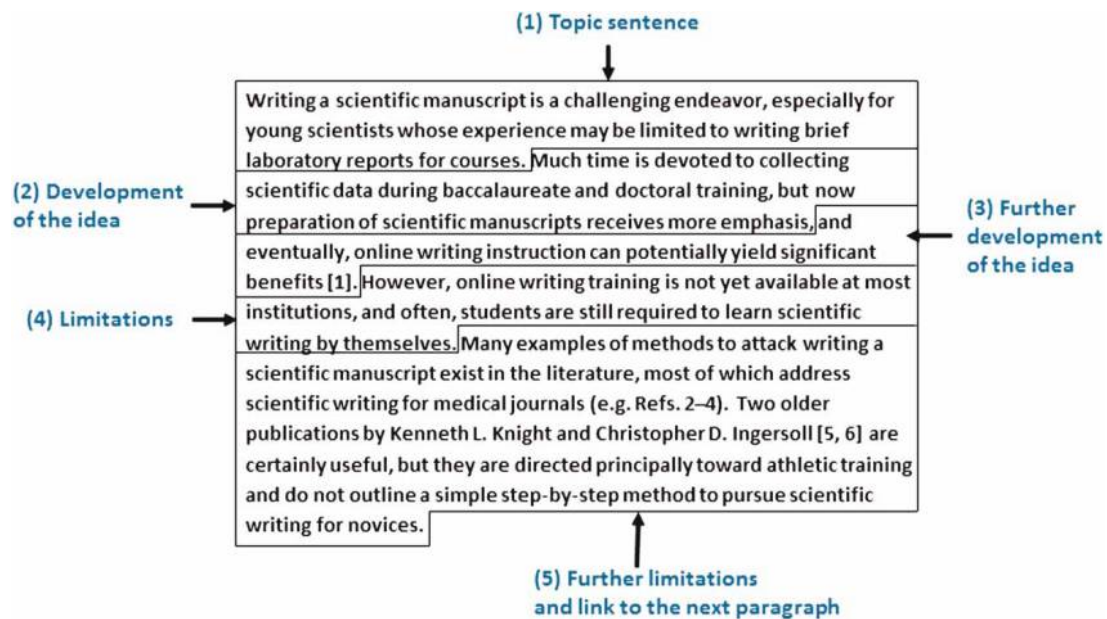


Figure 1: Structure of a typical paragraph.

The approach in marketing documents or on websites is different. Much more striking devices can be used to indicate paragraphs, such as enlarged dropped capitals, negative indentation, capitalisation of the first word, pulled paragraphs, colour, and animation, all of which would be unsuitable for more sober and formal regulatory documents or scientific publications. These really are more the province of the graphic designer rather than the writer but are also part of writing.

Structure of an ideal paragraph

The ideal paragraph has the following structure:

- A topic sentence setting the scene for the reader
- Text developing the idea with pros and cons and mentioning any other important aspects of the arguments in the paragraph
- Text concluding the paragraph and heralding the content of the next paragraph.

The content of the paragraph does not go outside these goalposts. This is illustrated by Fig. 1 with the opening paragraph of an excellent article entitled *Algorithm for Writing a Scientific Manuscript*.¹

In the example, (1) is the topic sentence. This article is about how difficult it is for inexperienced authors to write scientific manuscripts. This claim leads the reader to assume that this article will give help with this. The idea is developed in (2): Things have changed. Greater expectations with regard to the ability to write publishable documents are now placed on undergraduate and postgraduate students. In (3), the idea is further developed:

Online writing instruction is now available. Limitations are then described in (4): Online training is not available for everyone, and many still have to fend for themselves. The paragraph finishes with further limitations and a link with the next paragraph (5): There is a lot of advice out there on writing, but so far, no-one has produced a step-by-step method. We are now going to tell you about the simple method we have devised. ‘Do not outline’ is the simple linking device to the next paragraph. From this, the reader knows that the authors are now going to report on their own experience.

The topic sentence

Despite the lack of advice on paragraphing in books and on the Internet, most guidance refers to the concept of the ‘topic sentence’. In most cases, topic sentences appear at the beginning of a paragraph; however, they may appear at the beginning, middle, or end of the paragraph:

- As the first sentence of the first paragraph, the topic sentence sets the scene for the reader, delineating the subject area of the text and the content of the paragraph. Alternatively, the topic sentence can pick up an idea from the (end of) previous paragraph, set the scene for the reader, delineating the content of the paragraph.
- When in the middle of the paragraph, the topic sentence pulls together and redirects the content of the paragraph. This is used in creative writing, but is very rare in our type of text.

- At the end of the paragraph, the topic sentence summarises the content and, if appropriate and sometimes very discreetly, heralds the content of the next paragraph.

In regulatory documents, section headers often eliminate the need for a topic sentence because they tell what the section is about.

A simple example of the way an introductory topic sentence is used to help the reader is given below. Let's assume that you wrote the following two sentences to describe the aims of a study:

The present study aimed to show that a hexavalent vaccine and a hepatitis A vaccine can be administered concurrently without affecting the antibody responses to their respective antigens. It also aimed to assess the immune response to the hepatitis A vaccine when given in a two-dose schedule at 6 and 12 months of age in comparison with the recommended schedule starting at 2 years of age with 2 doses administered 6 months apart.

Look what happens when you add a topic sentence:

The present study had two aims. The primary aim was The secondary aim was to assess

Now, the reader immediately knows that this paragraph is about the aims of the study and that it had two; this is information that they did not know until the second sentence in the original text. In flowing text as in a journal article, the reader should never be half-way through a paragraph – or even at the end – and still not know what the paragraph was really about.

Below is an example of a poor topic sentence:

Original: One of our findings was surprising. None of the 16 healthy men had measurable HPL, that is, none had more than 0.7 ng/ml serum. The same was true of the 42 patients with benign prostatic hyperplasia. None of the 20 patients with carcinoma of the prostate had HPL in their serum (8 of the 20 had been receiving stilboestrol for at least 3 months before testing, however). This did not agree with a study reported by Smith *et al.* with similarly sized groups, where HPL in the serum was detected in more than 50% of cases in each group. The differences may have been due to differences in laboratory method. Smith *et al.*

did not report whether any of their patients had been receiving stilboestrol.

The attempted topic sentence underlined in the original text promises a surprising finding – but which finding is it? Also, it is not until you reach the group of boxed words that you know that this paragraph is about the absence of measurable HPL in these three groups. The information about stilboestrol is not linked, and there is no indication of how the text is to proceed.

Restructured version: Serum HPL (limit of detection 0.7 ng/ml) was not present in the 16 healthy males, 42 patients with benign prostatic hyperplasia, or 20 prostatic carcinoma patients in our study. This was a surprising finding, because serum HPL was found in more than 50% of cases in three similarly sized groups of the same types of patients in a study reported by Smith *et al.*, and we had expected positive findings in at least some of our prostatic carcinoma patients. Eight of these patients may not have had detectable HPL because they had been receiving stilboestrol for at least 3 months before testing. Smith *et al.* provided no information on this, and we have no explanation, other than a less sensitive method or error in our laboratory, which we then investigated.

The new topic sentence (underlined) in the restructured version tells you exactly what the paragraph is about. It is clear that all this information is surprising. The information on the patients receiving stilboestrol is kept together, and the reader is discreetly led into the content of the next paragraph with the last clause of this paragraph.

Is a topic sentence always needed?

The answer to this is no. It depends on two things: the document you are writing and, especially in regulatory documents, the section of text.

In a clinical study report (CSR), for example, you will find that much greater use is made of topic sentences in the introduction and discussion sections than in the methods and results sections. This is because the introduction and discussion are the closest you will come to 'creative writing' in a CSR. The text used in the methods and results sections often incorporates many other structural elements, such as detailed section headers, flowcharts, bulleted lists, tabular lists, and tables and figures. These are often better than text; the key information in the methods or results is often in these elements

and not written out, so it's usually enough to link them and complement them with single-sentence or very short paragraphs without topic sentences.

When to paragraph and when not to paragraph

The forced grouping of a series of important instructions into an inappropriate paragraph, such as in the methods section of a study protocol, can make them difficult to find. When giving instructions, a numbered list of sentences or groups of sentences is often better, especially if you need to refer back to them. The concept of paragraphing can also often be abandoned for the efficacy results section of a CSR, except for your introductory remarks.

As an example of when to paragraph, let's look at the introductory section under the heading 'Efficacy Results' in an extract from a real CSR.

11.4 Position Original: There were notable differences between the Asian and ITT populations with regard to primary baseline subject and disease characteristics (see *Section 11.2.2*) and post-study anticancer treatment (see *Section 11.2.3*). The Hispanic sample was too small for meaningful analysis. Results for the Asian and Hispanic populations are therefore not presented in detail below. Major differences are pointed out and, for all analyses, the reader is referred to the appropriate tables in *Section 14.2*.

The results in the PP population are summarized briefly below because there were no major differences from the ITT population. For detailed results, the reader is referred to the appropriate tables in *Section 14.2*.

The focus of efficacy reporting in this report is therefore on the ITT and White populations.

The author chose to present this general introductory information in three separate paragraphs, and to gain the necessary stress on the focus of this report, presented this information in a single-sentence paragraph at the end (where it is actually likely to remain unread!). This sentence is actually a good example of a summarizing topic sentence at the end of a paragraph, but it does not serve this function standing on its own at the end. It would work as a summarizing topic sentence if the paragraph had been presented in one block, which is what we would recommend here. Terminal topic sentences can often be used as introductory topic sentences, and this is the case here, so we would have positioned the sentence before the rest of the text in one block as a good introductory

topic sentence that stresses that the focus is on the ITT and White populations. Of course, slight adjustments to the text may be necessary. Thus, we would have reformulated the text like this:

11.4 Efficacy Results (Position Restructured version): The focus of efficacy reporting in this report is on the ITT and White populations. There were notable differences between the Asian and ITT populations with regard to primary baseline subject and disease characteristics (see *Section 11.2.2*) and post-study anticancer treatment (see *Section 11.2.3*). The Hispanic sample was too small for meaningful analysis. Results for the Asian and Hispanic populations are therefore not presented in detail below. Major differences are pointed out and, for all analyses, the reader is referred to the appropriate tables in *Section 14.2*. The results in the PP population are summarized briefly below because there were no major differences from the ITT population. For detailed results, the reader is referred to the appropriate tables in *Section 14.2*.

As an example of when *not* to paragraph, let's look at the individual efficacy results that follow the above example. In the text below, four typical variables from an oncology study – overall survival, progression-free survival, time to treatment failure, and duration of response – are reported on and each has its own heading, so topic sentences describing these are not required. All sections have the same structure: an introductory sentence, a detailed extract of the results in an in-text table, and then the important messages of the table in a few brief sentences. These sentences can either be grouped in a block or as a bulleted list, or can be seen as 'stand-alone' sentences presented separately.

11.4.1. Position Original: *Table 11.18* shows the results in the ITT population.

(in-text table)

The numbers of evaluable patients, median PFS times and HRs are given below. 48 patients on Drug A and 43 patients on Drug A + chemotherapy were evaluable for PFS at the cut-off. Median PFS time was the same at 4.8 months in both treatment groups. The HR for Drug A + chemotherapy over chemotherapy alone was 0.943 (95% CI: 0.825, 1.077).

Figure 11.5 shows the Kaplan-Meier estimates in the ITT population in both treatment groups.

The reformulated version below does not combine the text or employ a topic sentence:

11.4.1. Progression-free survival time (Position Restructured version): Table 11.18 shows the results in the ITT population.

(in-text table)

48 patients on Drug A and 43 patients on Drug A + chemotherapy were evaluable for PFS at the cut-off.

Median PFS time was the same at 4.8 months in both treatment groups.

The HR for Drug A + chemotherapy over chemotherapy alone was 0.943 (95% CI: 0.825, 1.077).

Figure 11.5 shows the Kaplan-Meier estimates in the ITT population in both treatment groups.

Nothing is gained in the text from making a paragraph out of the first three sentences with a topic sentence, other than telling the reader what they already know. The approach is also often very similar in the safety section of your CSR.

A further reason for presenting separate sentences in this situation is purely practical: separate sentences make it much easier to prepare summaries or a synopsis using cut-and-paste.

How long should a paragraph be?

In novels, paragraphs often extend over more than 1 page. Unlike scientific documents, however, novels are not written to convey information to the reader as succinctly and simply as possible.

Fowler² summarizes paragraph length as follows:

... a succession of very short paragraphs is as irritating as very long ones are wearisome. The paragraph is essentially a unit of thought, not of length: it must be homogeneous in subject matter and sequential in treatment. If a single sequence of treatment of a single subject means an unreasonably long paragraph, it may be divided into more than one. But passages that have not this unity must not be combined into one, even though each by itself may seem to make an unduly short paragraph.

In most of the documentation we produce, paragraphs that extend over more than 1 page are too off-putting for most readers. As we have seen above, this is unlikely to happen, however, in our type of document simply because of the nature of

the content. Regardless, you should not let such run-on paragraphs happen in your documents.

It is impossible to say how long a paragraph should be. A reader is likely to find a page with, let's say, three visible paragraph breaks much less off-putting than one break or no breaks. This means that you should probably be going for about 2–3 paragraphs per page in a study report-type text. A journal article is very different; you should do your best with paragraphing when you prepare your manuscript, but when you see the proofs and the layout (probably in two columns), you may decide that some re-paragraphing is necessary, but it will usually not be extensive. Paragraph length for marketing and medical communications documents and websites is very different, and many more liberties can be taken than in regulatory documents, manuscripts, and textbooks.

The 'half-paragraph'

This concept is not used in English. For the 'half-paragraph', no space is left between the end of the paragraph before the 'half-paragraph' and the start of the 'half-paragraph'. This rarely occurs in texts from countries where English is the first language. It is used by authors from Northwest European countries to introduce an idea that is 'not completely new'. Even if this is a stylistically recognized concept in your language area,³ it is not a wise policy to use it in documents for international consumption. Most readers will not recognize that you want to present a related idea that is not 'completely' new. Paragraphing is difficult enough without introducing intermediate concepts!

Single-sentence paragraphs

First, a quote from *The Careful Writer* by Theodor M Bernstein,⁴ erstwhile Consulting Editor of the *New York Times*: 'An elementary school teacher told her class that a paragraph could not contain only one sentence. When the impertinent pupils asked her why, she replied that obviously if it had only one sentence then it would be a sentence, not a paragraph. That teacher deserves a sentence – and a long one'. He also says: 'A scientific paper designed to be read closely and slowly by a thoughtful audience may have longer paragraphs than a first-grade primer'.

As we have seen, single-sentence paragraphs are difficult to avoid in some sections of regulatory documents, and may even be appropriate in those

sections. They are also frequently used in marketing and medical communications texts. Generally, however, especially in journal articles and other texts, such as product monographs, single-sentence paragraphs should be avoided. One reason for this is that they attract the eye and the content of the paragraph may be overemphasized – rather like putting information between dashes in flowing text. Check this, and if the emphasis is wrong, rewrite the surrounding paragraphs. But you may want the emphasis, of course!

You may also find that it is appropriate to have a single-sentence paragraph as an introductory paragraph in a text section:

Material and Methods

We performed a retrospective electronic patient chart analysis in patients presenting to the Emergency Department of Bern University Hospital, a Level 1 trauma centre that treats about 35,000 patients per year with a catchment population of about 2 million.

Our study included patients >16 years seen over an 11-year period (2000–2011). Patients <16 years were not reviewed as they are generally seen by Bern University Children’s Hospital. All cases were extracted from ‘Qualicare’, our electronic patient management database. Reports containing the ...

A single-sentence paragraph may also be appropriate at the end of your discussion section as the conclusion:

... ..

Although all of our patients were pain-free after surgery, this does not mean that our small sample has shown that pain in Dupuytren’s disease is linked to the histological changes described. Histological examination of samples from larger samples of patients with and without pain is required, with examination of many thin sections throughout the entire specimen with special dyeing techniques for nerve fibres.

We therefore suggest that the indication for surgery in Dupuytren’s disease be extended to patients with nodules that have been painful for more than one year – even in the early stages of the disease in the absence of functional deficits – with assessment of tissue samples for histological changes in nerve fibres.

Linking words and phrases

The sentences in paragraphs and the paragraphs themselves may need to be discreetly or obviously linked. Often, the link within the paragraph will simply be that they fall within the limits set by the topic sentence – *and this is often enough in English!* Sometimes you are telling a story, so the links need to be stronger, and perhaps the strongest links are needed for contradictory statements or when a point really is being ‘argued’, with abrupt changes reflected by links such as ‘despite this’, ‘on the contrary’, or ‘whereas’.

It is easy to overdo linking words, and very often in English all that is needed is a simple ‘these’, ‘such’, ‘also’, ‘then’, ‘but’, ‘however’, or ‘therefore’. My experience is that some continental European authors use too many linking words in English in introductions and discussions. When telling your story, a dramatic build-up is usually not appropriate or necessary, so you do not need to start with ‘We did this’ and continue like this: ‘Then we did this’, ‘In addition, we did this’, ‘Moreover we did this’, ‘Furthermore we took these measures’, and ‘Finally, we did this’. ‘In contrast’, Smith *et al.* did not do this, but ‘rather’ that. ‘Notwithstanding what Smith did, we stuck by our method’.

Linking words and phrases that tend to be over-used are:

- Moreover.
- Furthermore.
- In summary it can be said that ...
- In conclusion it can be said that ...
- Notwithstanding.
- Accordingly.
- Additionally.
- In addition.
- First, Second, Third, Fourth (with and without -ly). If you use these, make sure they are not too far apart, and beware: ‘fourth’ or ‘fourthly’ should be your limit – anything higher sounds silly.
- In comparison with/to this.

Care should also be taken with ‘rather’. It is not used as a linking word in the following way in English: ‘We did not do that. Rather, we did this. Use ‘instead’, or ‘We felt that ... would be more appropriate for ...’, or similar.

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