

Writing a scientific review paper:

General points:

- Try to make your research paper an integrated synthesis of the literature, rather than a jumbled regurgitation of facts.
- Give yourself enough time! For a 10-20 page paper it ideally takes a month to carry out the library searches and to collect the necessary materials (interlibrary loans etc).
- Start out with a clear idea of the question you are trying to answer in the paper. Write it somewhere and show it to an advisor to see if it makes sense, is "do-able" etc. In general a simple, specific idea is easier to research and to write about. Equally it must be interesting and inclusive enough to ensure there's enough material available to review.
- Get to know the library a.s.a.p.! Make sure you are familiar with all the resources available to help you locate references. Using the library well will save you hours of work and days of frustration!
- Take notes, including full citations (authors' names, journal, date and page number) from each paper as you read it. Use index cards or a word processor. Index cards are nice in that you can shuffle them around, color code ideas on them, highlight etc. The advantage of using a word processor is that you will later be able to use your notes to cut and paste together the first draft, plus you'll have all your citations there already which saves time when building your citation list. Organize your notes. "Where did I read that?" is the plague of all writers. The better organized your notes, the less this is a problem.
- Outline your paper before setting pen to paper for anything else! This will help you to organize your thoughts and will markedly improve the overall quality of your final product.
- Don't be afraid to write your ideas down before they are perfectly formed. If you can get them down on paper, you can place them in a logical sequence and develop them into a flowing presentation later.
- Use the draft system: Write a first draft. Leave it for a day or two. Come back to it and revise it as much as you can, then let someone read it. Once they have read it, revise the paper again. Respond to your reviewer's comments and also clarify any passages that seemed to confuse them. Expect that your paper will need revisions and don't feel bad when that turns out to be true.
- Don't write in the first person (I think). This reduces your credibility. Write with authority (It is, they do)

What goes into a review paper?

When writing a review paper your job is to present what is known about a specific topic and to synthesize all the unconnected threads of the individual studies into an integrated "State of the Science" type of review. In your paper you will outline the overall picture of your topic area it is currently understood by scientists in that field. Your paper should clearly outline any problems that are currently being addressed, and explain the basis of

any conflicts that exist between experts in the field. If there are important conflicts as a reviewer you are in a position to suggest which side of the conflict has the weight of evidence supporting it and why. For conflicts which, in your opinion, do not yet have a clear resolution, you are also in a position to make suggestions as to the types of experiments need to be done to resolve those arguments.

Your review paper should have the following sections:

A. Title: As for a research paper, this should be short and inform your reader of the major ideas that will be discussed.

B. Abstract: Again this should be written last and should summarize the major points made within the body of your paper.

C. Introduction: Your introduction should be short and concise (ca. 1 page) and is not given a separate heading from the body of the paper. The purpose of the introduction is to introduce your reader to the ideas that you will be addressing in the body of your paper. In your introduction you should be trying to bring readers from different backgrounds up to speed with the "thesis" or objective of your paper and explain to them why it is that this issue is important. It is not a review of the field... that is what the body of the paper is for! It is generally written after the body of the paper is completed (so that you know where you've "gone" intellectually in the paper and thus can effectively communicate to your reader what to expect).

D. Body: In this portion of your paper you will outline the background for your idea and begin to synthesize ideas from the papers you've read in order to build a coherent "thesis". Before you write this section, figure out what your perspective is going to be (what are you trying to show?). Having done this, try to present your ideas in such a way that they build your discussion logically towards your goal. Outlines will be a big help to you at this stage. Frequently using headings (e.g. History of the idea, Specific conflicts etc.) can help you to systematically address each important point that you wish to make, as well as helping your reader to follow your arguments. Once you've developed your headings you can then go back and place topic sentences for each paragraph of information you wish to convey under the appropriate heading. Each paragraph should have clear, well thought out points, and should contain only the information needed to make or support that point. Fill in each paragraph with more details until you have a coherent argument building towards your final, concluding statement.

E. Conclusion: Like the introduction, the conclusion section is not usually separated from the body of the paper, although it can be if it is really long. In this section you should restate the objective(s) of your paper and point out how you have satisfied these goals. It should also reiterate what the major conclusions (ideas) of your study are.

F. Acknowledgements: Again this should include only people who made considerable impact on your research... people with whom you had fruitful discussions, a librarian who

spent hours with you trying to track down an elusive publication that was key to your research etc.

G. Literature Cited. Should follow the standard format outlined by the journal in which you will publish.

<http://www.dentistry.leeds.ac.uk/elective/WRITE%20UP.htm>