



# How to.... Make a powerpoint presentation

Slides can be a powerful support tool during the presentation of your story to an audience. When preparing your presentation, put yourself in the position of your audience: They will hear this talk for the first time. Are the slides clear/informative? Do they look attractive? Here are some points to keep in mind when you are preparing your powerpoint.

1. Don't cram too much information onto a single slide.  
Let the slide 'breathe'.
2. Try to prevent 'text-only' slides.  
There might be no way around it every now and then, but in general you should have something more than just text on each slide. Typically the image is related to the message, but try to incorporate something visual (you can also choose to have a non-distracting visual element in your overall template).
3. A mere listing of bullet points is not informative for your audience.  
They may serve as a reminder for you (but shouldn't be used as such – use presenter tools or cue cards if needed), but often don't mean anything to an audience. Either use entire sentences (where you can leave out “the” and “an”, for instance) or consider changing a list of bullet points into a schematic (with arrows and connections between the different components). It is more visually appealing and also provides structure for your audience.
4. Make sure the font size is big enough!  
If you need to reduce the font size because otherwise the text doesn't fit on the slide, there is simply too much text on the slide. Find a way around it (e.g. spread it out over two slides). In general, try not to go below a 20pt font size for text you actually expect your audience to read. Also: take care to use the same font (type and size) throughout – double check this once your presentation is finished. You want to present a story that sounds and looks crisp and clear.
5. Use titles to your advantage.  
Make sure the heading of your slide is informative. As a rule of thumb, try to make the conclusion/take-home-message of the slide into a title. This works both ways: If you are nervous and forget what you wanted to say, it can serve as a reminder. If an audience member falls asleep or loses focus, they only have to read the title to get back up to speed. Try to stay away from generic headings like “introduction”. Instead say “an introduction to Alzheimer's disease” or “breast cancer”. One of the few exceptions to this rule might be a slide that says “summary” or “conclusions”.
6. Remember that a talk/presentation is different from a report.  
In a report (or paper) you should stick to the very functional order of introduction → methods → results → discussion → reference list.  
In a talk, however, you can give yourself more freedom. Tell a story that



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captivates your audience. A talk is less complete than a report/paper and allows for different accents. Find your own style.

7. Don't include a separate methods section.  
A separate methods section doesn't work in a talk: in a report/paper the reader can flip back and forth between the methods and results section. In a talk they will have forgotten about the methods by the time they get to the final results section. You have to do the mixing for them and it is easy to incorporate just enough technical detail as you present your findings. There are exceptions of course, when technology (development) is the actual focus/backbone of your entire story (for instance: If you've built a really cool new biosensor that will be the bulk of the talk. If your entire story is based on lineage tracing experiments and the audience needs to understand this technique or they will be lost, this will be an important aspect of the talk that should receive sufficient highlighting). Whatever you do, don't call the slide "methods" or "materials and methods". Call it "our experimental approach" or "lineage tracing technology" and always try to tie it to a main biological question and/or the aim of your story. In short: mix it up.
8. Don't include a reference slide  
Don't end a presentation with a reference list, but put relevant references in the footer of the appropriate slide where you actually discuss them. This is usually the thing an audience member quickly wants to write down to look up paper. So use *Author et al. (year)* either without or with the journal title and page numbers, or use the short Pubmed ID (PMID) number (which is non informative but easy to jot down). No need to include the title of the paper.
9. Do include an acknowledgements slide  
You rarely work in isolation. If you are part of a lab or research group, give credit to your colleagues, collaborators and – if relevant – funding bodies and grant agencies.
10. Don't be too afraid of repeating yourself.  
Especially if your audience hears multiple talks in a row, they will get tired and overwhelmed at some point. Stick to the good old "*tell them what you're going to tell them – then tell them – then tell them what you've told them*". In other words: Clearly phrase the main question or the main goal of your talk early on. Draw them in with a hook/example/interesting anecdote/question. Then present the body of your talk. Then summarize the main findings/points and make sure to tell the audience how they relate to your main message/questions: do we have all the answers? What are the implications of your work for the problem you wanted to address? What challenges still lie ahead?
11. Only give the audience the information they need.  
Do not confuse them. You are the expert and have lots of interesting stories to tell, but when preparing a talk, you will have to "*kill your darlings*". Stick to a clear and specific message. This is true for every slide, and for the talk overall. If you have a lot more to say: perfect. Keep it as a back up (you can literally prepare back up slides and put those after the acknowledgements) so you will come across as knowledgeable and prepared during the Q&A.



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12. Know your audience.

If you are giving a talk on genetically engineered mouse models for Alzheimer to an audience of neurosurgeons, you don't have to spend as much time introducing the brain but you may have to explain how you modify a genome. If you give the same talk at a mouse geneticists meeting, the emphasis in your introduction will be totally different.

13. Less is more.

Stick to the rule of 1 slide per minute. Some slides will go faster, because they only have a question on them, or because they are meant to illustrate something. Others will take longer (for instance if you have to explain a complicated technique). But in general, 1 slide per minute will make sure you don't go overtime (a good chairperson will make sure everybody sticks to the time allocated – there may be occasions where you are brutally stopped by a beeping timer – I have organized a conference with 25 flash talks in a row, after 2 minutes the microphone would simply be taken from you). This also means that the shorter the talk, the fewer slides you can use. You will find that preparing a shorter talk (especially a 5-10 minute one) is much, much more difficult than a longer (30-45 minute) one.

14. You can of course use figures from existing papers, provided that you properly reference them (typically done immediately below the figure or on the bottom of that particular slide, see 8). If they are too complex (i.e. contain more information than you need), make sure to explicitly lead your audience to the important bits. If you want to make your own figures: Great! It will not harm you to become familiar with Adobe Illustrator for drawing complex figures. You can also use this online resource: <http://www.servier.com/Powerpoint-image-bank>. It has a downloadable file of Powerpoint/Keynote ready components that you can use to make your own pathways/protein/DNA complexes etc. Nowadays, most people will be familiar with the online BioRender tool (<https://biorender.com>): with that option, there really is very little excuse to not draw your own figures.