

Preparing your figures for publication

Dear author,

Graphics which are to be published in a journal need to fulfill certain quality criteria. Pure Powerpoint presentations are not comprehensible to readers without the spoken word.

Basics of graphic composition

Less is more! Avoid tables with columns of numbers. Summarise the main conclusion in a figure.

- Annotations belong in a (self-)explanatory legend, do not use headings in the figure, explain abbreviations in the legend.
- Label all axes.
- Use the same font size throughout: Arial 12 point with a figure width of 150 mm in the printout.
- Only use colour if it is of relevance to the contents; preferably two-dimensional to three-dimensional (“columns”) graphics.

Data formats

- Submit graphics as a **sharp printout** as well as a file (e.g. Excel). Printout and file must be identical.
- Do not copy the graphic into a Word or Powerpoint file, but submit as **image file** with **clear labelling** (e.g. Fig_1 instead of joint_ap).
- Exception: Arrows and lettering can be added into the figure through Word or Powerpoint. In addition save original image file as indicated.

Screen resolution ↔ print resolution

Image resolution is the number of dots per width of 1 inch, the “dots per inch” (dpi). Printing images require a resolution of 800 dpi for graphics and 300 dpi for photographs.

Example: An image with 313 dots width and 463 dots height at a resolution of 96 dpi (computer screen resolution) corresponds to a width of 8.24 cm and a height of 12.18 cm and looks good on the computer screen; however, 300 dpi are required for print. Reduced in size accordingly (300 : 96 is a conversion factor of 3.125), the image is now only 2.64 cm x 3.9 cm large in print – which is about the size of a large stamp.

Resolution can not be achieved through mathematics

There are programs that can increase the number of image dots by splitting each dot into several dots; however, in print the image will still look very pixelated, because splitting of image dots does not add information to the image. Therefore, make sure that you always use the highest resolution your computer can offer when creating digital images.

- Use the highest resolution when scanning images.
- Chose the highest resolution on the highest quality level when taking photographs with a digital camera. If there is not enough storage space on your digital camera, you may need to buy a storage device with more space (256–512 MB). Camera models with less than 2 megapixel are unsuitable. Use a camera with about 5 megapixel.
- Digital image files are big! High quality image files can be several MB large! This may cause problems in sending these files electronically. It may be best to burn these the files onto CD and send them by post.

Vector graphics have no resolution problems

Some programs (e.g. Excel) produce images not with a limited number of dots but as a vector graphic. Vectorisation eliminates the problem of resolution. However, if halftone images (“photos”) are copied into such a program, these images retain their low resolution.

P. Henning, Stuttgart