

UNDERSTANDING ARTWORK

Digital artwork can be photographs, charts, graphs, diagrams, radiographs, etc. and it may be available in its original format or digitized after scanning an original.

Digital artwork is any image created on a computer or via a digital camera; it may originate from digital photos, scanned photos, and scanned slides.



Grayscale/black and white figure

Black and white images use only two colours (black and white); grayscale images have many shades of gray in between. Colour images are often converted to grayscale. If your figures are to be printed in black and white, make sure that details are still clearly identifiable and avoid reference to colour in the legends.

Images should be tightly cropped (no white around them) and have a minimum resolution of 300 dpi.

If lettering is included resolution should be 600 dpi.

File type: TIFF

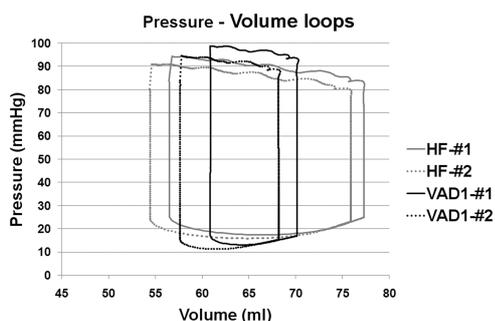


Colour figures

Colour images should be created and submitted in four colour mode (CMYK): this is the best mode for printing and it ensures a more faithful representation of your image. For the online version of your article we will convert your figures to three colour mode (RGB) as this is the best for monitor display.

Create and save your figure in CMYK format and set the resolution to at least 300 dpi. If lettering is included resolution should be 600 dpi.

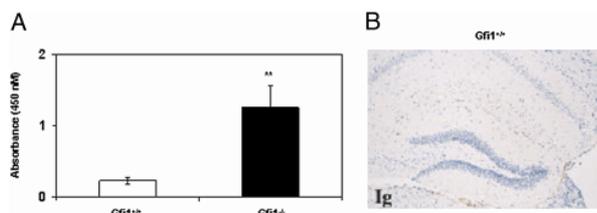
File type: TIFF/EPS



Line art

This is the artwork type commonly used for graphs and charts. Information contained in black and white line art images is only black and white with no tints or gradations. Create your line art image as bitmap file at a resolution of about 1000 dpi. Save and submit it with a resolution of at least 1200 dpi.

File type: TIFF/EPS



Combination halftones

This is typically the combination of grayscale or/and colour image with line art elements.

The requirements for this particular type of image are that the text is as clear as possible, with unchanged quality of the halftone. The only way to do this is by combining the properties of the two image types, and this normally results in files that are larger.

Follow the indications for both line art and grayscale/colour figure and save your image in TIFF format (or as JPEG, maximum quality), with a resolution of 600-900 dpi.

File type: TIFF/EPS

Please be aware that we require high resolution, print quality files for all images in your submission, which will be used for the print version.

The web PDF will display images downsampled to 200 DPI to allow for easier handling (e-mail, downloads from websites, etc.). High resolution images will also be available in the html version of your article.

CREATING YOUR ARTWORK

In order to have good images, they must be created in good quality. There is no way to increase the resolution of a file once it has been created. Set your camera or scanner to its highest resolution before you create your image. Do Not Take Graphics off of the Web
Graphics on the web are optimized for speed of download, and are of low resolution (72 dpi). As the minimum resolution for a figure is 300 dpi, graphics originating from websites tend to reproduce very poorly. Please note that increasing the resolution of a low resolution image WILL NOT improve the quality of the image, and is unacceptable.

Artwork submitted scanning an original print-out

In this case it is important to set your scanner correctly:

- 1) **Select the colour mode.** You may scan a colour figure in grayscale or in colour. Select the colour mode to CMYK and not to RGB. Submitting your figures in colour indicates that you wish the figure printed in colour and this – depending on the journal – may incur publication charges.
- 2) **Select the resolution.** You can usually set the resolution in your scanner software (referred to as dpi, dots per inch). Use a high resolution setting (choose 600-1200 dpi): if you scan your figure in low resolution you cannot increase it without blurring the image.
- 3) **Select the size.** Figures should be sized to fit the width of 1, 1.5, or 2 columns with no extra white or black space surrounding them:
 - 1 column wide (3.3" / 8.7cm)
 - 1.5 columns wide (5" / 13,6cm)
 - 2 columns wide (6.9" / 18cm)

You must hide any patient information and mask the face to protect patient's identity.

- 4) **Name your files.** Name figures as follows: corresponding author's last name_figure1.tif, corresponding author's last name_figure1.eps, etc. (e.g. smith_figure1.tif).

Artwork created using Excel graphs

- 1) Print the graph created from your Excel data to PDF setting the highest resolution.
- 2) Import the PDF in Photoshop.
- 3) Export the figure as high resolution TIFF file. The maximum size of each figures must not exceed 10 Mb.
- 4) Name your files. Name figures as follows: corresponding author's last name_figure1.tif, corresponding author's last name_figure1.eps, etc. (e.g. smith_figure1.tif).

Artwork created using Powerpoint

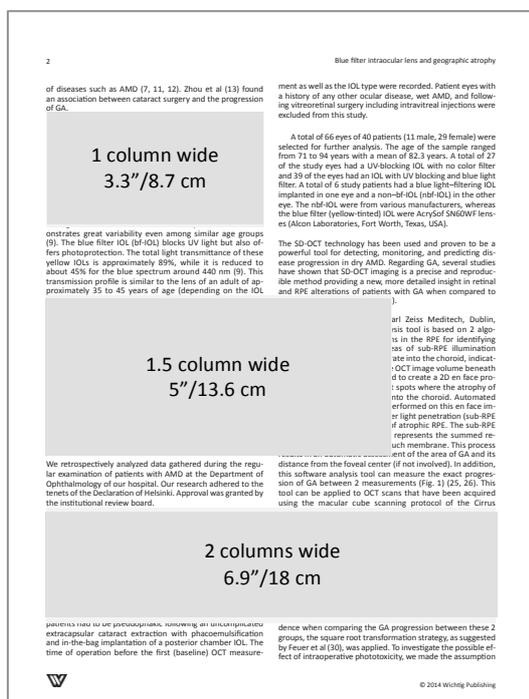
- 1) Make sure the figures used in your Powerpoint presentation are initially of good quality. Save the slide as TIFF file. If you are creating a composite, make sure all parts are labelled in the same way using Arial font.
- 2) Name your files. Name figures as follows: corresponding author's last name_figure1.tif, corresponding author's last name_figure1.eps, etc. (e.g. smith_figure1.tif).

HOW TO ASSESS YOUR FIGURE FILES

Two elements are important upon assessing your figures: size and resolution.

Image size

Image size is the actual dimensions of your figures. We recommend that you create figures for the final publication size, considering that they will be published according to the following column sizes:

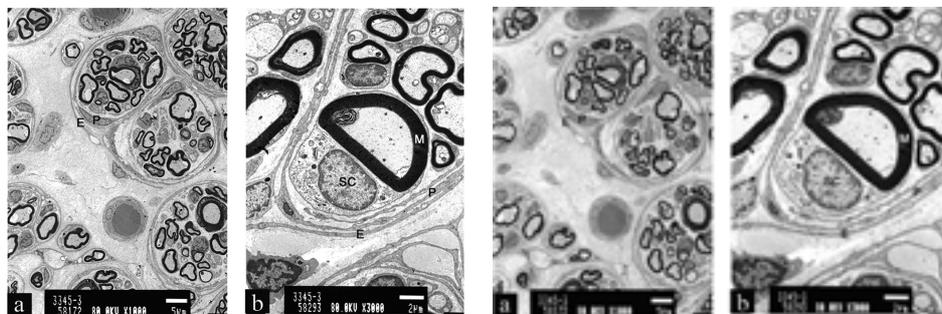


The Production Editor of your Journal will decide on the optimal size for your figure.

Image resolution

Resolution is the number of pixels in a given area.

The resolution for print formats is the number of *dots per inch* (dpi). In general, the higher the dpi, the sharper the image will be. For good quality print the resolution should be at least 300 dpi. Do not assume that if your figure displays well on a computer screen it will print as well. On a video screen, resolution is measured in PPI, that is the number of *pixels per inch*.



HIGH RESOLUTION

LOW RESOLUTION

HOW TO CHECK YOUR FIGURES

You will need Adobe Photoshop.

Resolution

Go to Image → Image size and you will determine the actual resolution and size of your figure.

Colour mode

A colour figure should be submitted as CMYK colour mode.

As opposed to RGB mode, CMYK is the most faithful method to reproduce colour in print: it mixes 4 colours (Cyan, Magenta, Yellow and Black). RGB is the colour mode used by computer monitors or screens: it mixes 3 colours (Red, Green, Blue) to display all colours combinations.

Figures displayed on a screen set to RGB will appear brighter and sharper on video.

Setting the colour mode to CMYK will display on your screen a more faithful preview of the print output of your figure.

How to check your figure for colour mode

You will need Adobe Photoshop.

Go to Image → Colour mode and you will determine the mode in use (CMYK, RGB, Grayscale, etc).

Font information

To ensure that the published version (in print and online) matches your electronic source file as closely as possible, make sure that you only use the following recommended fonts in the creation of your artwork, where possible:

- Arial (or Helvetica)
- Symbol
- Font size 10 or 12

Make sure that any lettering in your figures is legible at final size and that font sizes are consistent throughout your artwork. Avoid using effects, extra boxes, unnecessary colours or fonts and do not embed legends in the figure file (figure legends must always be listed in the manuscript).

FILE TYPES

We recommend that only EPS, TIFF or JPEG formats are used for electronic artwork. Microsoft Office files (Word, Excel and PowerPoint) are not accepted.

EPS (Encapsulated PostScript) is the preferred format for line art and technical drawings.

TIFF (Tagged Image File Format) is the recommended file format for grayscale and colour images or combination halftones.

JPEG files are accepted for grayscale and colour or halftone images.

If your only option is to save a file as a JPEG, save it with the highest quality setting.

FILE NAME

To enable us to identify your source files correctly, we recommend that you name figures consistently throughout your submission process.

For example:

Brown_figure1.tif – corresponding author's last name figure1.tif

Brown_fig2_b.jpg – corresponding author's last name figure 2 part b.jpg

Brown_graph 3 a-d.tif – corresponding author's last name graph 3 parts a to d.tif

Do not use legends in the file name or long complex names.

Number figures according to their sequence in the text.

Make sure all figures and their parts are cited in the text.

GENERAL SUGGESTIONS

Crop out any extra white or black space surrounding the image.

Do not submit figures saved as GIF files.

Text within figures should be embedded in the file.

Save each figure as a separate file.

Submit composite figures as one figure only and label each part with lowercase letters (a, b, etc)

Upload figures consecutively following each Journal's submission instructions. You may zip them together: this will save time on upload (see author submission tutorial).

Figure legends must be listed in the manuscript and NOT submitted as part of the figure.

If your figure includes symbols or abbreviations they must be explained in the figure legend.

PERMISSIONS

If you reproduce figures that have already been published elsewhere you must obtain written permission from the copyright owner. Acknowledge the original source by including a reference citation in the figure legend.

FIGURE SUBMISSION CHECKLIST

Before you submit your artwork, make sure you can answer 'YES' to the following:

- My files are in the correct format (EPS, TIFF/JPEG).
- My colour images are provided in CYMK.
- The physical dimensions of the artwork match the column size described above.
- The lettering used in the artwork does not vary too much in size. See Font Information.
- Any shading or unnecessary colours and distracting elements have been removed
- Figure files have been named correctly.
- All illustrations are provided as separate files.
- All artwork is numbered according to its sequence in the text.
- Figures have legends and these are listed in the manuscript.
- All figures are cited in the text in consecutive order, including any parts.