Guidelines for the Preparation of Figures

Overview

The below tables provide the basic requirements for submitting your manuscript for peer review as well as the more detailed post-acceptance figure requirements.

For Peer-Review Submission: Although we encourage authors to send us the highest-quality figures you can, for peer-review purposes we are happy to accept a wide variety of formats, sizes, and resolutions.

For Post-Acceptance: To enhance the online appearance of your accepted article, the below guidelines will help you to effectively showcase your research.

Important tip! Creating your figures in one of the preferred file types is better than converting an existing figure later on. If you cannot create one of your figures as an EPS, TIFF, or PNG, send us what you are able to create and we'll do our best to present it effectively.

Note to journals published in print: Print quality will be drastically reduced, possibly impacting readability, if you do not supply your images in the preferred formats and resolutions.

For Peer-Review Submission

Element	Description	Example	Preferred	Acceptable
File Types				
	Line art: Line art includes graphs, flowcharts, diagrams, scatter plots, and other text-based figures that are not tables. Important! If a figure includes both line art and images, follow the line art guidelines.	and the state of t	• EPS • PDF	Any standard file type. When in doubt, submit a PDF.
	Images: Images include photographs, drawings, imaging system outputs (such as MRIs or ultrasound), and other graphical representations.		TIFFPNGEPS	

Resolution			Preferred	Acceptable
	Line art: Resolution for line art needs to be higher than for images because each individual line must be more precisely rendered. Tip! Larger fonts make for easier reading.	300 210 300 300 300 300 300 300 300 300 300 3	600 dpi	As long as it is legible to reviewers.
	Images: Though many web- based images often appear at very low resolutions (72 dpi or lower), readers will only benefit from your research if your images offer hi-resolution detail.		300 dpi	
Image Size			Preferred	Acceptable
	Small: Used for small line		80 mm	Large enough to
	art and images that will	Results 3	canvas size	support review.
	occupy one-quarter of the page.	Fig. sear of the populations required to a of Gard Sea. 10. 10 and of the Sea come and a destination for and 10. 10 and of the Sea come and a destination for and 10. 10 and the sea come of a C paragraphics is not confident 10. 10 and Sea Code. 11. 10 and Sea Code. 12. 10 and Sea Code. 13. 10 and Sea Code. 14. 10 and Sea Code. 15. 10 and Sea Code. 16. 10 and Sea C	or Pixel	
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		the control of the co	(width):	
			1800px	
			minimum	
	Large: Used for larger line art and images that occupy		180 mm	
	a half-page or an entire		canvas size	
	page. Carefully consider the		or Pixel dimensions	
	minimum space necessary		(width):	
	for each figure.	Figure 1. Topic could, depair of least risk find systems, and white department and in to the least of least of least risk find sometimes and the least of least of least risk find sometimes (1.5 to least risk fi	1800px	
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File Size			Preferred	Acceptable
	Individual files: Individual figures may load slowly or time-out slower systems if they are too large.	Size: 1.08 MB (Less than 10 MB each.	Large files may impede reviewers.
	Complete article files, zipped: Submission systems limit total file size to 500 MBs.	Name Size Article_Files.zip 2,254 KB	Less than 500 MB total.	EEO limits.
File Name				
	File Naming Convention: to facilitate ease of review, name figure files only with the word "figure" and the appropriate number.	Figure_1.tiff	1 figure per file.	All figures in a single PDF, Word document, or as a part of a LaTeX submission.
Legends, and labeling			Preferred	Acceptable
	Figure legends or captions should use Arabic numerals, follow the order in which they appear in the manuscript, and explain any abbreviations or symbols that appear in the figure.	Figure 1. A good figure legend succinctly describes the content and enhances understanding with clear labels.	A separate figure legend section in the manuscript, after references.	Anywhere clearly indicating which figure it explains.

For Post-Acceptance Articles

Element	Description	Example	Preferred	Acceptable
File Types				
	Line art: Line art includes graphs, flowcharts, diagrams, scatter plots, and other text-based figures that are not tables. Important! If a figure includes both line art and images, follow the line art guidelines.	100 100 100 100 100 100 100 100 100 100	• EPS • PDF	Any standard including: • GIF • JPG • TIF/TIFF • PNG • WMF • DOC
	Images: Images include photographs, drawings, imaging system outputs (such as MRIs or ultrasound), and other graphical representations.		TIFFPNGEPS	PPT PSD AI PS
Resolution				
	Line art: Resolution for line art needs to be higher than for images because each individual line must be more precisely rendered. Tip! Larger fonts make for easier reading.	250 250 250 130 130 50 9	600-1000 dpi	Must be legible when viewed as an 80 mm or 1800 pixel width, unmagnified.
	Images: Though many web- based images often appear at very low resolutions (72 dpi or lower), readers will only benefit from your research if your images offer hi-resolution detail.		300 dpi	

Image Size				
	Small: Used for small line art and images that will occupy one-quarter of the page.	No control of population reagal toor to or of the bios. In a set of the population control of the order of the order of the order of the properties is not confident on the order of the properties. The control of the order of the properties of the order of the orde	80 mm canvas size or Pixel dimensions (width): 1800px minimum	Smaller or larger images will be modified during composition, which may result in decreased quality.
	Large: Used for larger line art and images that occupy a half-page or an entire page. Carefully consider the minimum space necessary for each figure.	When a section of the control of the	180 mm canvas size or Pixel dimensions (width): 1800px minimum	
File Size				
	Individual files: Individual figures may load slowly or time-out slower systems if they are too large.	Size: 1.08 MB (Less than 10 MB each.	Large files may slow a reader's experience.
	Complete article files, zipped: Submission systems limit total file size to 500 MBs.	Name Size Article_Files.zip 2,254 KB	Less than 500 MB total.	EEO limits.
File Name				
	File Naming Convention: to facilitate ease of review, name figure files only with the word "figure" and the appropriate number.	Figure_1.tiff	1 figure per file.	All figures in a single PDF, Word document, or as a part of a LaTeX submission.

Legends, and labeling			Preferred	Acceptable
	Figure legends or captions should use Arabic numerals, follow the order in which they appear in the manuscript, and explain any abbreviations or symbols that appear in the figure.	Figure 1. A good figure legend succinctly describes the content and enhances understanding with clear labels.	A separate figure legend section in the manuscript, after references.	Anywhere clearly indicating which figure it explains.

Submission Checklist: Figures

Checklist	Figure Preparation Guidelines and Tips: Preferred standards for peer review and required standards for production.
	Are all figures included in your submission as separate files or in a single PDF/Word document/LaTeX suite? Tip! Single, original, unconverted files are best.
	Do all figures have an accompanying legend that describes the content and explains any abbreviations or symbols? Tip! Include your figure legends as a separate section in your main text file.
	Are all figures cited in the main text of your article? Tip! Ensure all figures are numbered in the order in which they appear.
	Are all words or symbols in your figures large enough for easy reading by your audience? Tip! Closely follow the preferred resolution guidelines for best presentation.
	Are all figures saved in an acceptable file type? Tip! Use the preferred file types for best image quality. If in doubt, submit a PDF for initial review.
	Is each individual figure file less than 10 MB? Tip! Remove excess white space surrounding figures for smaller file sizes.
	Were figures created between 80 and 180 mm width? 300 to 600 DPI? Tip! Higher quality figures are more useful to readers.
	Are all figure files named with their appropriate figure number? Tip! Using only figure numbers in the file names ensures correct typesetting.

Ethical Considerations

Changes to images can create misleading results when research data are collected as images. It may, however, be legitimate and even necessary to edit images. We ask authors to declare where manipulations have been made.

- Specific features within an image should not be enhanced, obscured, removed, moved, or introduced.
- Original unprocessed images must be provided by authors should any indication of enhancement be identified.
- Adjustments to brightness or contrast are only acceptable if they apply equally across the entire
 image and are applied equally to controls, and as long as they do not obscure, eliminate, or
 misrepresent any information present in the information originally captured.
- Excessive manipulations, such as processing to emphasize one region in the image at the
 expense of others, are inappropriate, as is emphasizing experimental data relative to the
 control.
- Nonlinear adjustments or deleting portions of a recording must be disclosed in a figure legend.

Guidelines for Gels and Blots

Starting April 2020, some journals will require authors of papers that present results of gel electrophoresis and/or blots to provide original unprocessed images for every result, for the journal's files. Authors should submit them as Supporting Information for review only, or may choose to publish the unprocessed images in the journal's Supporting Information section. The journal will only publish papers submitted after April 2020 when the authors have provided original unprocessed gel electrophoresis images.