

To meet ASN's quality standards for publication, it is important to submit digital art that conforms to the appropriate resolution, size, color mode, and file format. Doing so will help to avoid delays in publication and maximize the quality of images, both online and in print.

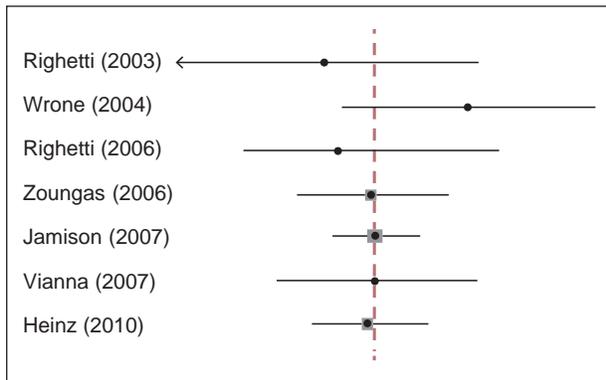
ASN accepts files in Microsoft Office format, including PowerPoint, which can make it easier to provide good, sharp vector-quality text and lines.\* If you would like to submit files in PowerPoint, please be sure to follow the guidelines on page 4.

**FIGURE EXAMPLES - Dos and Don'ts:**

**DO:**

clean, sharp text and lines, preferably vector  
consistent font size: 6 points or larger  
Arial/Helvetica required

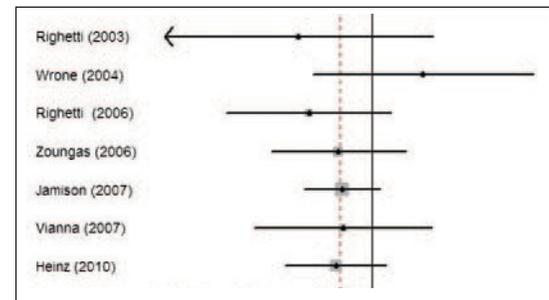
**DO:**



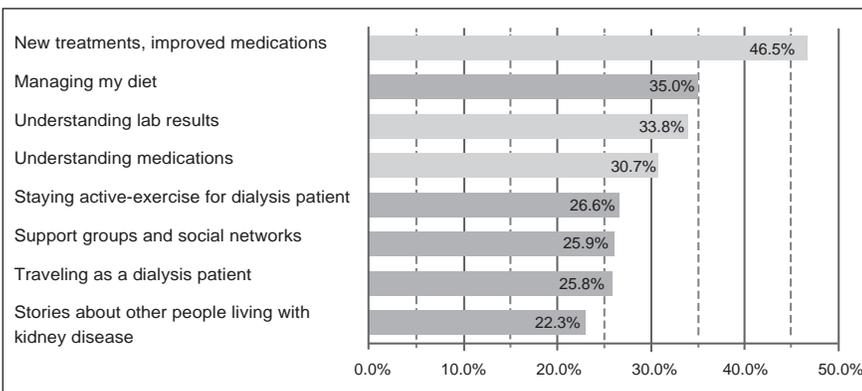
**DON'T:**

low resolution  
fuzzy text and lines  
size too small to be clearly legible

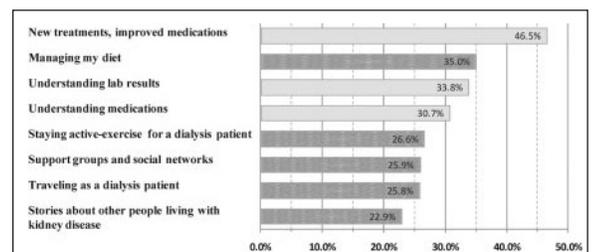
**DON'T:**



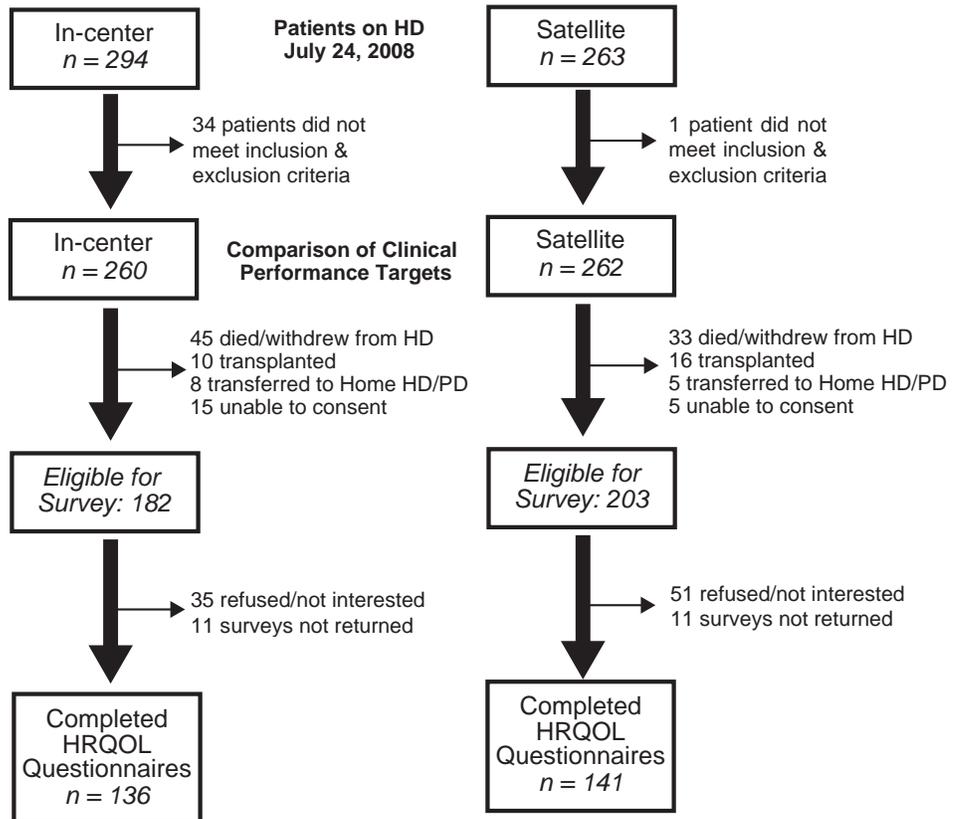
**DO:**



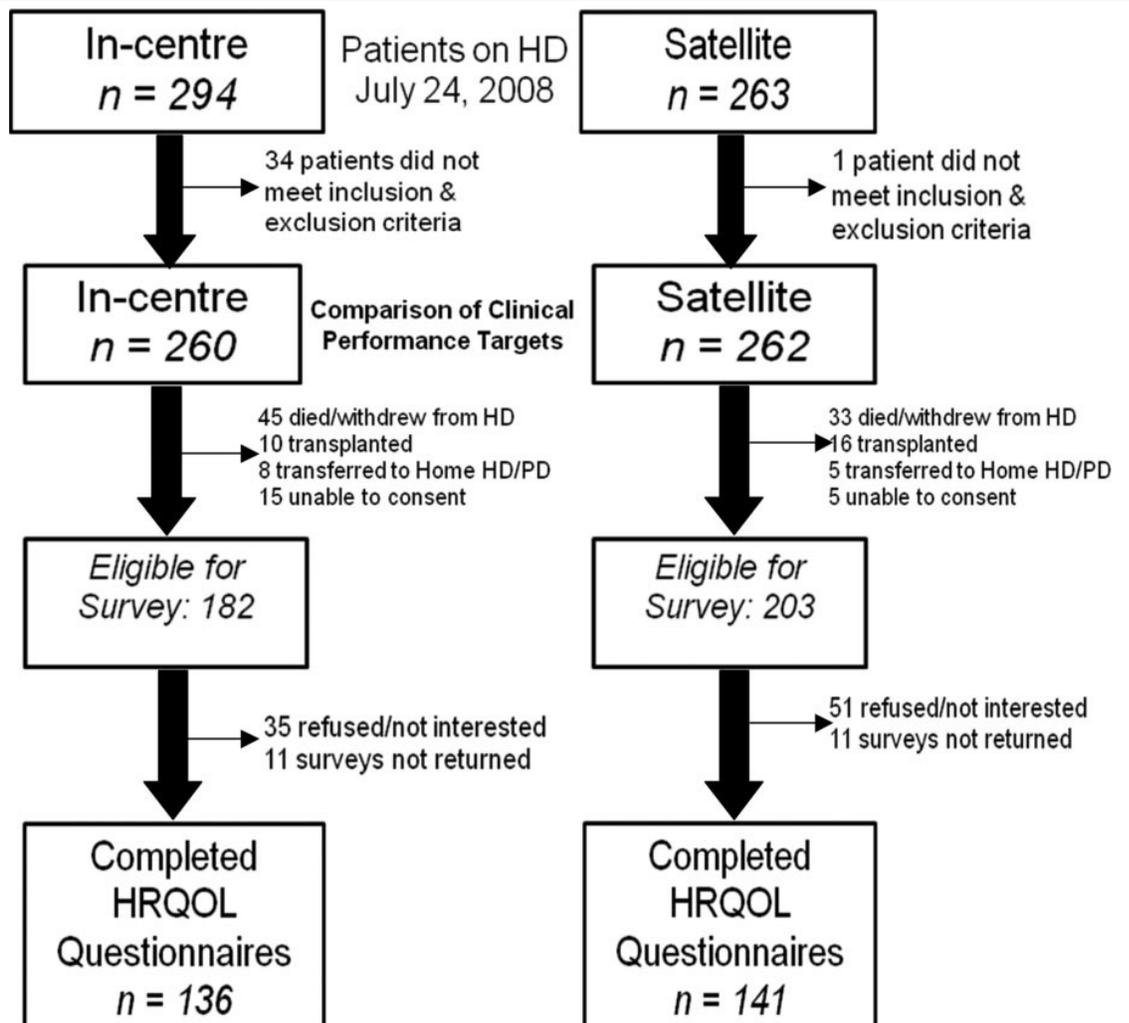
**DON'T:**



**DO:**  
keep type relatively consistent in individual figures, and across all figures in the article.

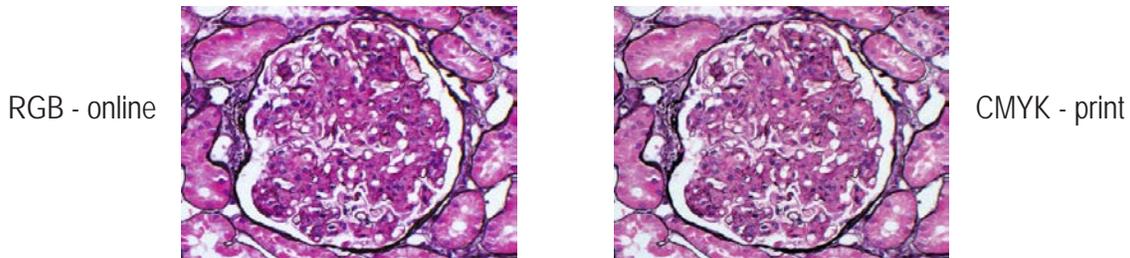


**DON'T:**



**GENERAL GUIDELINES**

**Color Mode:** All color image files should be submitted in their original RGB color. This will ensure that the brightest possible RGB colors will show online, as the RGB color space (light-based) can produce many more colors than the CMYK color space (ink-based). For this reason, there may be a color shift when images are converted to CMYK for print - please see the example below. Whenever possible, tag the submitted RGB image with the originating ICC profile to ensure the best possible conversion to CMYK for the printed journal.



**Sizing:** Prepare figures at the final publication size; less than the height of the page (55 picas / 9.2" / 24cm), and one of the following widths.

- 1 column wide (18.5 picas / 3.1" / 7.8cm)
- 1.5 columns wide (27 picas / 4.5" / 11.4cm)
- 2 columns wide (40.5 picas / 6.75" / 17.1cm)

- Brief Communications only:**
- 2 columns wide (27 picas / 4.5" / 11.4cm)
  - 3 columns wide (42 picas / 7" / 17.8cm)

**Font Usage:** Please use the same font for all figures in your manuscript; use standard fonts such as Arial, Helvetica, Times, Symbol, Mathematical Pi, and European Pi. Keep the size of text relatively consistent across the entire figure; in other words, do not use very large text and very small text in the same figure. Preferred text size is 6–9 points when the figure is properly sized to publication widths as above. For vector application files, it is recommended to convert fonts to outlines (Adobe Illustrator) or embed fonts (MS Office). See the next page for more information.

**Resolution and Raster Images:** Low-resolution images are one of the leading causes of art resubmission and publication delays. It is important that submitted raster images meet the minimum resolution requirements. Raster images can be classified as monochrome, halftone, or combination halftone.

(Note: "Raster" = "Pixel-based" - the most used Raster application is Adobe Photoshop.)

- **Monochrome (1-bit) images:** Common examples are graphs and charts made of solid black and white, with no gray values. The preferred resolution for this type of image is between 1000 and 1200 ppi at publication size. The preferred file format is TIFF. PDF and EPS are also accepted.
- **Halftones:** Common examples are color or grayscale figures containing pictures only, with no text or thin lines. The suggested minimum resolution for this type of image is 300 ppi at publication size. The preferred file format is TIFF. EPS and PDF are also accepted.
- **Combination Halftones:** Common examples are color or grayscale figures containing both halftone and line art /text elements. The preferred resolution for this type of image is between 600 and 900 ppi at publication size. The preferred file format is TIFF. EPS and PDF are also accepted.

**Note: When saving these files, use only LZW compression (i.e., do not use jpeg compression).**

<b>Monochrome</b>	<b>Combination Halftones</b> (grayscale or color images with text and/or line art)	<b>Halftones</b> (grayscale or color images with no text or line art)
<b>1000 – 1200 dpi</b>	<b>600 – 900 dpi</b>	<b>300 dpi</b>

**\*Vector Graphics:** Vector images are **not** pixel-based, but rather are composed of mathematically defined geometric shapes—lines, objects, and fills. They are typically generated using drawing or illustration programs (e.g., Adobe Illustrator, PowerPoint, etc.) Vector graphics are resolution independent and can be scaled to any size without quality loss. Note: fonts are vector graphics by nature, so when you type using a vector application, the resulting text will be vector quality.

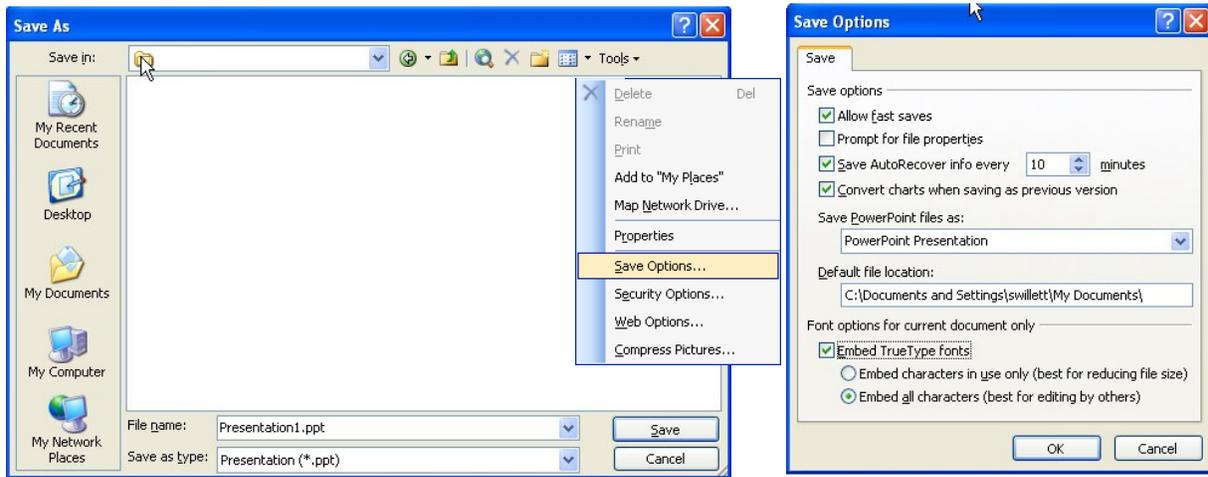
- **Vector line art:** Common examples are graphs and charts created in illustration programs. Preferred when saved as an EPS file, with all fonts converted to outlines, and graph lines at least 0.25 points thick.
- **Combination line/halftone:** Common examples are color or grayscale figures containing halftone and line art elements. The halftone elements (which must comply with the requirements listed under “Resolution and Raster Images”) should be processed in Photoshop and the line elements in Illustrator, and the two elements from the two applications should be combined in Illustrator. Preferred when saved as an EPS file, with all fonts converted to outlines, and graph lines at least 0.25 point wide.
- If fonts have not been converted to outlines, always choose to embed fonts when saving files from your application.

**Microsoft Office:** PowerPoint, Excel, and Word are acceptable formats. When creating the original file in a Microsoft Office application, please follow these general rules to ensure that the initial file is properly prepared:

1. Do not use pattern or textured fills in graphics. Instead, use solid fills or screen percentages that will be effectively converted to vector images during file conversion. **Note:** A 20% difference in screen percentages is most effective for differentiation.
2. Artwork placed within any MS Office application should be of acceptable minimum resolution for print production: 300 ppi for halftones, 600–900 ppi for combinations and 1000–1200 ppi for monochrome line art.
3. When inserting pictures/images into files, be sure to select “insert” and not “insert link,” which will not properly embed the high-resolution image into the MS Office file.
4. Always embed fonts in your documents. See guidelines below for embedding fonts in MS Office documents.

**Embedding Fonts in MS Office:**

- From the file menu, select Save As.
- On the toolbar, select Save Options, select the Embed TrueType Fonts check box, and select Embed all characters (best for editing by others).



**Authors who do not comply with these guidelines may be asked to resubmit their figures in a print-quality format, which may delay publication.**