The goal is to create a standardized and consistent representation of the visual content for meaningful analysis and interpretation, i.e., to ensure a comprehensive and accurate comparison of image structures. When comparing the structure of two images, several factors are important to consider for equalization or normalization. Here is a suggested order that takes into consideration common image processing steps:

1. **Background Removal: If images have different backgrounds, removing or standardizing the background can improve the comparison.**
2. **Equalize Brightness: Ensure that the brightness levels across images are similar. This step is crucial for perceptual consistency and accurate comparison. When brightness levels are significantly different between images, it can overshadow or obscure the underlying structures. Equalizing brightness allows for a more focused analysis of the structural details, making it easier to identify and compare features. Also, m**any image analysis algorithms are sensitive to variations in intensity or brightness. Equalizing brightness helps in standardizing the input data, ensuring that the algorithms work consistently across different images. Finally, various image comparison metrics such as structural similarity (SSIM) or mean squared error (MSE), assume consistent brightness levels for accurate assessments. Equalizing brightness aligns images in a way that facilitates the application of these metrics.
3. **Equalize Contrast:** Ensuring that the contrast levels are similar between the images. You can use techniques like histogram equalization to adjust the contrast.
4. **Color Balancing:** If the images are in color, it's crucial to check and balance the color channels. Color differences can significantly affect the perception of similarity.
5. **Normalize Image Size**: Resize or resample the images to a consistent resolution. This helps avoid distortions in the comparison process and ensures that features are size-independent. resizing the images to a consistent resolution can be necessary to avoid distortions in the comparison process.
6. **Orientation and Rotation Adjustment: Align or rotate the images to a common orientation. This is especially important if the structures you are comparing have specific orientations.**
7. **Noise Reduction:** Reducing noise, especially in low-light conditions, can enhance the accuracy of structure comparison. Apply noise reduction techniques to enhance the signal-to-noise ratio, improving the accuracy of structural analysis.
8. **Sharpness enhancement:** Differences in image sharpness can impact structural similarity. Techniques like image blurring or sharpening may be applied. Adjust the sharpness of the images to ensure that structural features are well-defined.
9. **Color Space Conversion:** Convert the images to a common colour space if needed, facilitating consistent analysis across channels.
10. **Preprocessing Techniques:** Applying various image processing techniques such as edge detection, filtering, or morphological operations may enhance the structural information.
11. **Segmentation (if applicable):**

If your structural comparison involves segmenting specific regions of interest, perform segmentation based on well-defined criteria.

1. **Feature Extraction (if applicable):**

Extract relevant features from the images based on the nature of the structural comparison. This could involve extracting keypoints, edges, or other relevant features.

1. **Apply Structural Comparison Metrics:**

Use appropriate structural comparison metrics (e.g., SSIM, MSE) to quantitatively assess the similarity or differences between images.

1. **Visualization:**

Visualize the results of the structural comparison using suitable visualization techniques.

Use opencv (**cv2**),pillow (**pil**), scikit-image (**skimage**), imageio (**imageio**), dlib (**dlib**)