

Rules for Measurement of Percent Stenosis of Intracranial Arteries

- 1) Diameter measurements of arteries must be done using an electronic cursor provided by the imaging software
- 2) The image showing the most severe diameter stenosis should be chosen for measuring the stenotic diameter (D_s)
- 3) To measure the diameter of the reference normal artery (D_n) use the following WASID rules for establishing where to measure D_n

Location for measuring D_n for the MCA, Intracranial Vertebral and Basilar Arteries

The rules for measuring D_n for these 3 arteries are similar.

1st choice: the non-diseased, proximal part of the artery at its widest, non-tortuous segment that has parallel margins

2nd choice: the non-diseased, distal part of the artery at its widest, parallel, non-tortuous segment. Use 2nd choice if the proximal part of the artery cannot be used e.g., stenosis in the proximal artery

3rd choice: the non-diseased, most distal, parallel, non-tortuous segment of the feeding artery. Use 3rd choice if the entire artery with the stenosis is diseased. The 3rd choices are: the ipsilateral supraclinoid carotid artery for a MCA stenosis, the ipsilateral extracranial vertebral artery for an intracranial vertebral artery stenosis, and the dominant intracranial vertebral artery for a basilar stenosis

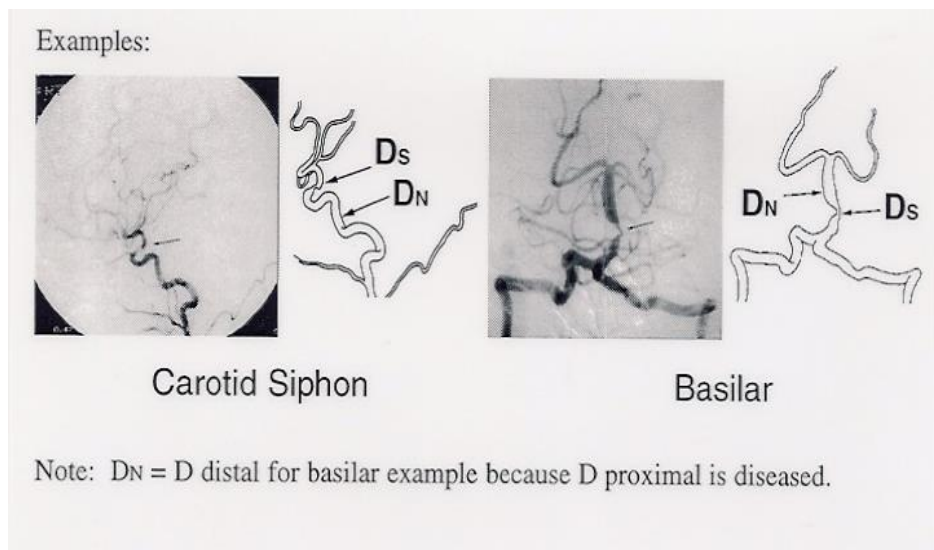
Location for measuring D_n for the Intracranial Carotid Artery

1st choice: the non-diseased, widest, parallel, non-tortuous portion of the petrous carotid artery

2nd choice: the most distal, parallel part of the extracranial internal carotid artery. Use 2nd choice if the entire petrous carotid is diseased

By using the formula $(1 - [D_s / D_n]) \times 100$, the percent diameter stenosis of the target lesion will be calculated.

See figure on the other side for where to measure D_n for examples of carotid and basilar stenoses.



For carotid siphon lesion, D normal = diameter of petrous carotid artery at widest, parallel, non-tortuous segment