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What is a Brain Aneurysm?

- An abnormal blood filled bulge of a blood vessel and especially an artery resulting from weakening (as from disease) of the vessel wall.
- One in 15 people in the United States suffers from aneurysm.

Brain aneurysms are often discovered when they rupture, causing bleeding into the brain.

Aneurysm can lead to:
- hemorrhagic stroke
- brain damage
- death
What are the two types of aneurysms?

Saccular most common type of aneurysm. Also known as a "berry" aneurysm because of its shape. Has a neck and stem.

Fusiform less common type of aneurysm. An out pouching of an arterial wall on both sides of the artery. Does not have a stem.
<table>
<thead>
<tr>
<th>Symptoms</th>
<th>ruptured brain aneurysms</th>
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<tbody>
<tr>
<td>• Cranial Nerve Palsy</td>
<td>• Localized Headache</td>
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<tr>
<td>• Dilated Pupils</td>
<td>• Nausea &amp; Vomiting</td>
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<tr>
<td>• Double Vision</td>
<td>• Stiff Neck</td>
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<tr>
<td>• Pain Above and Behind Eye</td>
<td>• Blurred or Double Vision</td>
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<tr>
<td>• Localized Headache</td>
<td>• Sensitivity to Light</td>
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<td>(photophobia)</td>
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<td>• Loss of Sensation</td>
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Factors

- Smoking
- Traumatic Head Injury
- Use of Alcohol
- Use of Oral Contraceptives
- Family History of Brain Aneurysms
- Other Inherited Disorders: Ehler's Syndrome, Polycystic Kidney Disease, and Mar fan's Syndrome
The place where aneurysms are more likely to appear is in the internal carotid artery.
Where is the internal carotid artery located?
Reconstruction of arterial geometry: 3D view
Reconstruction of arterial geometry: 2D CT scan

Internal carotid artery
Reconstruction of arterial geometry: 2D CT scan

Internal carotid artery
Reconstruction of arterial geometry: numerical software
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Warning: This might be disturbing for some viewers.
STA in situ flow checked (while still connected in the scalp).