American College of Radiology  
ACR Appropriateness Criteria®

Cerebrovascular Disease-Child

Variant 1: Child age older than 6 months. Emergent imaging for clinical presentation suggestive of acute nonsickle–cell related stroke. New focal fixed or worsening neurologic defect lasting less than 24 hours from last seen normal state. No contraindications to emergent intervention. Initial imaging.

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18 (19216043) | 4 |
19 (20625171) | 4 |
20 (19039041) | 4 |
21 (16841210) | 3 |
22 (12743660) | 2 |
23 (21975501) | 4 |
24 (25063989) | 3 |
25 (28705823) | 4 |

| CT head without IV contrast | Usually appropriate | Limited | 1-10 mSv | 0.3-3 mSv [ped] | 8 | 8 | 1 0 0 0 0 2 4 6 6 |

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**Variant 3:** Child. Clinical presentation suggestive of acute stroke, known or suspected arteriopathy, or moyamoya. Not a candidate for emergent treatment. Initial imaging.

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- 16 (20445969)
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- 30 (24483252)
- 31 (9799310)
- 34 (15846018)
- 35 (15703903)

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### Variant 4: Child. Known or suspected cervicocranial arterial dissection based on clinical or imaging findings. Next imaging study.

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- Study Quality
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  - 53 (19351813)

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- 52 (21979145)
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**References:** 17 (20113901)

### Arteriography cervicocerebral

| Procedure                  | May be appropriate | Limited | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 1 | 0 | 0 | 2 | 7 | 6 | 2 | 0 | 0 |

**References:** 17 (20113901)

### MRI head with IV contrast

| Procedure                  | May be appropriate (Disagreement) | Expert Opinion | 0 0 mSv | 0 0 mSv [ped] | 5 | 5 | 3 | 0 | 2 | 3 | 6 | 3 | 1 | 0 | 0 |

**References:** 56 (15986347)

### CT head with IV contrast

| Procedure                  | Usually not appropriate | Limited | ☢☢☢ 1-10 mSv | ☢☢☢☢ 0.3-3 mSv [ped] | 2 | 2 | 6 | 5 | 6 | 0 | 0 | 1 | 0 | 0 | 1 |

**References:** 56 (15986347)

### CT head without and with IV contrast

| Procedure                  | Usually not appropriate | Limited | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 2 | 2 | 8 | 5 | 4 | 1 | 0 | 0 | 0 | 1 | 0 |

**References:** 56 (15986347)

### US duplex Doppler head

| Procedure                  | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 1 | 1 | 12 | 2 | 2 | 0 | 2 | 0 | 0 | 1 | 0 |

**References:** 4

### Variant 6: Child. Nontraumatic intraparenchymal hemorrhage (hematoma) found on CT or MRI. Unknown etiology. Next imaging study.

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**Variant 7:** Child. Nontraumatic subarachnoid hemorrhage (SAH) detected by noncontrast CT. Next imaging study.

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### References

- **Study Quality**
  - [59 (24156863)](59 (24156863))

### Variant 8: Child. Clinical presentation suggestive of acute stroke, known or suspected high-flow vascular anomaly. Initial imaging.

#### Procedure

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### References

- **Study Quality**
  - [24 (25063989)](24 (25063989))

- **Study Quality**
  - [24 (25063989)](24 (25063989))
### Arteriography cervicocerebral

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#### Variant 9: Child. Clinical presentation suggestive of acute stroke, known or suspected low-flow vascular anomaly. Initial imaging.

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Variant 10: Child. Clinical presentation suggestive of acute stroke, known or suspected cortical vein or dural venous sinus thrombosis. Initial imaging.

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**Variant 11:** Child. Clinical presentation suggestive of acute stroke, sickle cell disease. New focal fixed or worsening neurologic defect. Initial imaging.

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<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
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**References**

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| MRI head with IV contrast             | Usually not          | Expert Consensus | 2 2 9 4 3 1 0 1 0 0 0 |
|                                      | appropriate          | 0 0 mSv [ped]    |               |

| US duplex Doppler head               | Usually not          | Limited          | 2 2 6 4 4 0 3 0 0 2 0 |
|                                      | appropriate          | 0 0 mSv [ped]    |               |

<table>
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Appendix Key
A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

Appropriateness Category: The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

SOE: Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- References: The citation number and PMID for the reference(s) associated with the recommendation.
- Study Quality: The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

RRL: Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

Rating: The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Median: The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Final tabulations: A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at www.acr.org/ac.