

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|---------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| CT head perfusion with IV contrast | Usually not appropriate | Strong | ☼☼☼ 1-10 mSv | | 2 | 2 | 6 | 5 | 3 | 1 | 4 | 1 | 1 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 18 (22068990) | 2 | | | | | | | | | | | | |
| | | 17 (27939758) | 2 | | | | | | | | | | | | |
| | | 16 (34925211) | 2 | | | | | | | | | | | | |
| | | 15 (21220677) | 2 | | | | | | | | | | | | |
| | | 14 (23228203) | 2 | | | | | | | | | | | | |
| MRI head perfusion with IV contrast | Usually not appropriate | Strong | ○ ○ mSv | ○ ○ mSv [ped] | 2 | 2 | 7 | 3 | 7 | 1 | 0 | 0 | 1 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 33 (29146719) | 2 | | | | | | | | | | | | |
| | | 32 (17200864) | 2 | | | | | | | | | | | | |
| | | 31 (11003277) | 2 | | | | | | | | | | | | |
| | | 30 (27070836) | 2 | | | | | | | | | | | | |
| | | 29 (24256197) | 2 | | | | | | | | | | | | |
| | | 28 (15569725) | 4 | | | | | | | | | | | | |
| | | 18 (22068990) | 2 | | | | | | | | | | | | |
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼ 0.3-3 mSv [ped] | 1 | 1 | 19 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 1 | 1 | 18 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arteriography cervicocerebral | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 1 | 1 | 15 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ ○ mSv | ○ ○ mSv [ped] | 1 | 1 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| US duplex Doppler transcranial | Usually not appropriate | Expert Consensus | ○ ○ mSv | ○ ○ mSv [ped] | 1 | 1 | 11 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|---------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| MRV head without IV contrast | Usually not appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 12 | 1 | 6 | 1 | 1 | 0 | 0 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 37 (21917479) | 4 | | | | | | | | | | | | |
| CTV head with IV contrast | Usually not appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 1 | 1 | 15 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| MRV head without and with IV contrast | Usually not appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 11 | 4 | 4 | 1 | 0 | 1 | 0 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 37 (21917479) | 4 | | | | | | | | | | | | |

Variant 2: Adult. Focal neurologic deficit. Clinically suspected acute ischemic stroke. Initial imaging.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---------------------------|--------------------------|---------------|---------------|---------------------|--------|--------|-------------------|---|---|---|---|---|---|---|----|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CTA head with IV contrast | Usually appropriate | Strong | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 9 | 9 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 6 | 12 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 60 (35342807) | 2 | | | | | | | | | | | | |
| | | 57 (29364767) | 1 | | | | | | | | | | | | |
| | | 49 (36239645) | 2 | | | | | | | | | | | | |
| | | 48 (36239644) | 1 | | | | | | | | | | | | |
| | | 46 (29129157) | 4 | | | | | | | | | | | | |
| | | 44 (26898852) | Not Assessed | | | | | | | | | | | | |
| CTA neck with IV contrast | Usually appropriate | Moderate | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕ 0.3-3 mSv [ped] | 9 | 9 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 12 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 12 (34024117) | 4 | | | | | | | | | | | | |
| | | 13 (31662037) | 4 | | | | | | | | | | | | |

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|---------------------------------------|-------------------------|------------------|---------------|---------------------|------|---|----|---|---|---|---|---|---|---|---|
| | | | 53 (35251309) | | Good | | | | | | | | | | |
| MRI head without and with IV contrast | Usually not appropriate | Limited | ○ ○ mSv | ○ ○ mSv [ped] | 2 | 2 | 5 | 5 | 8 | 1 | 0 | 0 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 62 (29934921) | | 4 | | | | | | | | | | | |
| CTV head with IV contrast | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗⊗ 3-10 mSv [ped] | 2 | 2 | 10 | 5 | 4 | 0 | 1 | 1 | 0 | 0 | 0 |
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗ 0.3-3 mSv [ped] | 1 | 1 | 14 | 4 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗⊗ 3-10 mSv [ped] | 1 | 1 | 13 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 1 |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ ○ mSv | ○ ○ mSv [ped] | 1 | 1 | 14 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| US duplex Doppler transcranial | Usually not appropriate | Limited | ○ ○ mSv | ○ ○ mSv [ped] | 1 | 1 | 12 | 1 | 5 | 1 | 1 | 1 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 39 (16339467) | | 4 | | | | | | | | | | | |
| MRV head without IV contrast | Usually not appropriate | Expert Consensus | ○ ○ mSv | ○ ○ mSv [ped] | 1 | 1 | 11 | 3 | 4 | 1 | 2 | 0 | 0 | 0 | 0 |
| MRV head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ ○ mSv | ○ ○ mSv [ped] | 1 | 1 | 11 | 3 | 4 | 1 | 1 | 1 | 0 | 0 | 0 |

Variant 3: Adult. Recent ischemic infarct; less than 24 hours. Initial imaging.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---------------------------|--------------------------|--------|--------------|---------------------|--------|--------|-------------------|---|---|---|---|---|---|---|----|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CTA head with IV contrast | Usually appropriate | Strong | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗⊗ 3-10 mSv [ped] | 9 | 9 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 3 | 13 |

| References | Study Quality |
|---------------|---------------|
| 60 (35342807) | 2 |
| 57 (29364767) | 1 |
| 49 (36239645) | 2 |
| 48 (36239644) | 1 |
| 46 (29129157) | 4 |
| 44 (26898852) | Not Assessed |

| | | | | | | | | | | | | | | | |
|---------------------------|---------------------|----------|--------------|---------------------|---|---|---|---|---|---|---|---|---|---|----|
| CTA neck with IV contrast | Usually appropriate | Moderate | ☼☼☼ 1-10 mSv | ☼☼☼ 0.3-3 mSv [ped] | 9 | 9 | 1 | 0 | 0 | 0 | 0 | 1 | 4 | 2 | 13 |
|---------------------------|---------------------|----------|--------------|---------------------|---|---|---|---|---|---|---|---|---|---|----|

| References | Study Quality |
|---------------|---------------|
| 12 (34024117) | 4 |
| 13 (31662037) | 4 |
| 61 (27092472) | 2 |

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|-----------------------------|---------------------|--------|--------------|---------------------|---|---|---|---|---|---|---|---|---|---|----|
| CT head without IV contrast | Usually appropriate | Strong | ☼☼☼ 1-10 mSv | ☼☼☼ 0.3-3 mSv [ped] | 9 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 16 |
|-----------------------------|---------------------|--------|--------------|---------------------|---|---|---|---|---|---|---|---|---|---|----|

| References | Study Quality |
|---------------|---------------|
| 59 (18617663) | 2 |
| 58 (10905241) | 2 |
| 57 (29364767) | 1 |
| 49 (36239645) | 2 |
| 48 (36239644) | 1 |
| 47 (35138767) | 2 |
| 46 (29129157) | 4 |
| 44 (26898852) | Not Assessed |

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|------------------------------|---------------------|---------|---------|---------------|---|---|---|---|---|---|---|---|----|---|---|
| MRA head without IV contrast | Usually appropriate | Limited | ○ 0 mSv | ○ 0 mSv [ped] | 7 | 7 | 0 | 0 | 0 | 1 | 2 | 0 | 12 | 3 | 1 |
|------------------------------|---------------------|---------|---------|---------------|---|---|---|---|---|---|---|---|----|---|---|

| References | Study Quality |
|---------------|---------------|
| 39 (16339467) | 4 |
| 52 (32668115) | 4 |
| 56 (27673305) | 2 |

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|---------------------------------------|-------------------------|------------------|---------------|---------------------|---|---|----|---|---|---|----|---|---|---|---|
| MRI head perfusion with IV contrast | May be appropriate | Moderate | 0 0 mSv | 0 0 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 1 | 14 | 3 | 0 | 1 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 39 (16339467) | 4 | | | | | | | | | | | | |
| | | 46 (29129157) | 4 | | | | | | | | | | | | |
| | | 57 (29364767) | 1 | | | | | | | | | | | | |
| US duplex Doppler carotid artery | May be appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 5 | 5 | 1 | 0 | 0 | 6 | 10 | 2 | 0 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 63 (10471419) | 4 | | | | | | | | | | | | |
| | | 64 (29307510) | 2 | | | | | | | | | | | | |
| | | 12 (34024117) | 4 | | | | | | | | | | | | |
| MRI head without and with IV contrast | Usually not appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 3 | 3 | 5 | 2 | 4 | 6 | 2 | 0 | 0 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 62 (29934921) | 4 | | | | | | | | | | | | |
| Arteriography cervicocerebral | Usually not appropriate | Strong | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 2 | 2 | 7 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 55 (29075836) | 2 | | | | | | | | | | | | |
| | | 54 (35593152) | Good | | | | | | | | | | | | |
| | | 53 (35251309) | Good | | | | | | | | | | | | |
| US duplex Doppler transcranial | Usually not appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 2 | 2 | 9 | 4 | 4 | 1 | 2 | 1 | 0 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 39 (16339467) | 4 | | | | | | | | | | | | |
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕ 0.3-3 mSv [ped] | 1 | 1 | 14 | 3 | 3 | 0 | 0 | 0 | 1 | 0 | 0 |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗⊗ 3-10 mSv [ped] | 1 | 1 | 13 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 1 |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRV head without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 12 | 5 | 1 | 1 | 1 | 0 | 0 | 1 | 0 |
| CTV head with IV contrast | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗⊗ 3-10 mSv [ped] | 1 | 1 | 11 | 3 | 4 | 0 | 1 | 1 | 0 | 1 | 0 |
| MRV head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 11 | 5 | 2 | 1 | 1 | 0 | 0 | 1 | 0 |

Variant 4: Adult. Recent ischemic infarct; greater than 24 hours. Initial imaging.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | | |
|-----------------------------|--------------------------|---------------|---------------|---------------------|--------|--------|-------------------|---|---|---|---|---|---|---|----|--|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| CT head without IV contrast | Usually appropriate | Strong | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗ 0.3-3 mSv [ped] | 9 | 9 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 14 | |
| | | References | Study Quality | | | | | | | | | | | | | |
| | | 68 (34921104) | 2 | | | | | | | | | | | | | |
| | | 67 (24525954) | 2 | | | | | | | | | | | | | |
| CTA head with IV contrast | Usually appropriate | Limited | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗⊗ 3-10 mSv [ped] | 7 | 7 | 0 | 0 | 0 | 1 | 4 | 4 | 6 | 2 | 2 | |
| | | References | Study Quality | | | | | | | | | | | | | |
| | | 22 (26330567) | 2 | | | | | | | | | | | | | |
| | | 23 (35314513) | 4 | | | | | | | | | | | | | |
| | | 69 (35143758) | 4 | | | | | | | | | | | | | |
| CTA neck with IV contrast | Usually appropriate | Limited | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗ 0.3-3 mSv [ped] | 7 | 7 | 0 | 0 | 1 | 0 | 2 | 4 | 5 | 2 | 6 | |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹ 0.3-3 mSv [ped] | 1 | 1 | 14 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 0 |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 1 | 1 | 13 | 2 | 3 | 1 | 0 | 0 | 0 | 1 | 0 |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| US duplex Doppler transcranial | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 11 | 3 | 1 | 1 | 2 | 1 | 0 | 0 | 0 |
| MRV head without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 10 | 3 | 3 | 1 | 1 | 0 | 1 | 0 | 0 |
| CTV head with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 1 | 1 | 13 | 2 | 1 | 1 | 2 | 0 | 0 | 1 | 0 |
| MRV head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 10 | 3 | 3 | 1 | 1 | 0 | 0 | 1 | 0 |

Variant 5: Adult. Prior ischemic infarct. Surveillance imaging.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|-----------------------------|--------------------------|---------------|--------------|---------------------|--------|--------|-------------------|---|---|---|----|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT head without IV contrast | Usually appropriate | Strong | ☹☹☹ 1-10 mSv | ☹☹☹ 0.3-3 mSv [ped] | 8 | 8 | 1 | 0 | 1 | 0 | 1 | 1 | 2 | 5 | 8 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 67 (24525954) | | 2 | | | | | | | | | | | |
| | | 68 (34921104) | | 2 | | | | | | | | | | | |
| CTA head with IV contrast | May be appropriate | Limited | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 5 | 5 | 2 | 0 | 0 | 1 | 14 | 1 | 1 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 22 (26330567) | | 2 | | | | | | | | | | | |

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|---------------------------------------|-------------------------|------------------|---------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| MRI head perfusion with IV contrast | Usually not appropriate | Strong | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 7 | 3 | 7 | 0 | 2 | 0 | 0 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 18 (22068990) | 2 | | | | | | | | | | | | |
| | | 33 (29146719) | 2 | | | | | | | | | | | | |
| | | 32 (17200864) | 2 | | | | | | | | | | | | |
| | | 31 (11003277) | 2 | | | | | | | | | | | | |
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕ 0.3-3 mSv [ped] | 1 | 1 | 13 | 3 | 2 | 0 | 0 | 1 | 0 | 0 | 0 |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 1 | 1 | 12 | 2 | 4 | 0 | 0 | 0 | 1 | 0 | 0 |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 12 | 2 | 1 | 0 | 2 | 1 | 1 | 0 | 0 |
| US duplex Doppler transcranial | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 10 | 3 | 1 | 2 | 3 | 0 | 0 | 0 | 0 |
| MRV head without IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 11 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 1 |
| CTV head with IV contrast | Usually not appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 1 | 1 | 12 | 2 | 2 | 0 | 2 | 0 | 1 | 0 | 0 |
| MRV head without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 11 | 2 | 4 | 0 | 1 | 0 | 1 | 0 | 0 |

Variant 6: Adult. Known intraparenchymal hemorrhage. No history of trauma. Follow-up imaging study.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|-----------------------------|--------------------------|------------------|--------------|---------------------|--------|--------|-------------------|---|---|---|---|---|---|---|----|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT head without IV contrast | Usually appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕ 0.3-3 mSv [ped] | 9 | 9 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 12 |

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|---------------------------------------|-------------------------|------------------|---------------|---------------------|---------------|---|----|---|---|---|----|---|---|---|---|--|--|
| | | | 95 (19910545) | | 3 | | | | | | | | | | | | |
| MRV head without IV contrast | May be appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 2 | 14 | 2 | 1 | 0 | 0 | | |
| CTV head with IV contrast | May be appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗⊗ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 1 | 15 | 2 | 1 | 0 | 0 | | |
| MRV head without and with IV contrast | May be appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 0 | 15 | 3 | 0 | 1 | 0 | | |
| MRI head perfusion with IV contrast | Usually not appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 3 | 3 | 7 | 1 | 7 | 0 | 3 | 1 | 0 | 0 | 0 | | |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 5 (34794589) | | 4 | | | | | | | | | | | | |
| CTA neck with IV contrast | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗ 0.3-3 mSv [ped] | 2 | 2 | 7 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗⊗ 3-10 mSv [ped] | 2 | 2 | 9 | 6 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | | |
| CT head perfusion with IV contrast | Usually not appropriate | Limited | ⊗⊗⊗ 1-10 mSv | | 2 | 2 | 7 | 4 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | | |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 5 (34794589) | | 4 | | | | | | | | | | | | |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 7 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| MRA neck without IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 8 | 4 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | | |
| MRA neck without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 8 | 4 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | | |
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗ 0.3-3 mSv [ped] | 1 | 1 | 10 | 3 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | | |

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| | | | 103 (26670082) | | 2 | | | | | | | | | | | | |
| | | | 102 (11237970) | | 4 | | | | | | | | | | | | |
| MRV head without IV contrast | Usually appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 8 | 8 | 1 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 9 | | |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 104 (25938564) | | 2 | | | | | | | | | | | | |
| CT head with IV contrast | May be appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕ 0.3-3 mSv [ped] | 4 | 4 | 4 | 2 | 2 | 6 | 4 | 1 | 0 | 0 | 0 | | |
| CTA head with IV contrast | Usually not appropriate | Limited | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 3 | 3 | 5 | 3 | 3 | 4 | 3 | 1 | 0 | 0 | 0 | | |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 5 (34794589) | | 4 | | | | | | | | | | | | |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 3 | 3 | 6 | 1 | 5 | 2 | 4 | 0 | 0 | 1 | 0 | | |
| CT head perfusion with IV contrast | Usually not appropriate | Limited | ⊕⊕⊕ 1-10 mSv | | 3 | 3 | 6 | 3 | 6 | 2 | 1 | 1 | 0 | 0 | 0 | | |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 100 (24172883) | | 3 | | | | | | | | | | | | |
| MRI head perfusion with IV contrast | Usually not appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 3 | 3 | 6 | 3 | 4 | 3 | 3 | 0 | 0 | 0 | 0 | | |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 100 (24172883) | | 3 | | | | | | | | | | | | |
| CTA neck with IV contrast | Usually not appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕ 0.3-3 mSv [ped] | 1 | 1 | 10 | 5 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | | |
| Arteriography cervicocerebral | Usually not appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 1 | 1 | 10 | 3 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | | |
| MRA head without IV contrast | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 1 | 1 | 14 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | | |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|---------|---------------|---|---|----|---|---|---|---|---|---|---|---|
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 1 | 1 | 13 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| MRA neck without IV contrast | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 1 | 1 | 16 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| MRA neck without and with IV contrast | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 1 | 1 | 16 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| US duplex Doppler carotid artery | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 1 | 1 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| US duplex Doppler transcranial | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 1 | 1 | 15 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

Variant 8: Adult. Known venous sinus thrombosis. Surveillance imaging.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---------------------------------------|--------------------------|----------------|---------------|---------------------|--------|--------|-------------------|---|---|---|---|---|---|---|----|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| MRV head without and with IV contrast | Usually appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 9 | 9 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 4 | 11 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 104 (25938564) | 2 | | | | | | | | | | | | |
| CT head without IV contrast | Usually appropriate | Limited | ☹☹☹ 1-10 mSv | ☹☹☹ 0.3-3 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 6 | 5 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 99 (21293023) | 4 | | | | | | | | | | | | |
| MRI head without IV contrast | Usually appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 0 | 2 | 0 | 6 | 7 | 4 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 102 (11237970) | 4 | | | | | | | | | | | | |
| | | 103 (26670082) | 2 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|---------------|---------------------|---|---|---|---|---|---|---|---|---|---|---|
| MRI head without and with IV contrast | Usually appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 0 | 2 | 0 | 7 | 5 | 5 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 102 (11237970) | 4 | | | | | | | | | | | | |
| | | 103 (26670082) | 2 | | | | | | | | | | | | |
| MRV head without IV contrast | Usually appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 8 | 8 | 1 | 0 | 0 | 0 | 1 | 1 | 3 | 7 | 6 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 104 (25938564) | 2 | | | | | | | | | | | | |
| CTV head with IV contrast | Usually appropriate | Limited | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 9 | 6 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 101 (9393193) | 3 | | | | | | | | | | | | |
| | | 106 (17114562) | 2 | | | | | | | | | | | | |
| CTA head with IV contrast | Usually not appropriate | Limited | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 3 | 3 | 7 | 1 | 7 | 2 | 2 | 0 | 0 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 5 (34794589) | 4 | | | | | | | | | | | | |
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼ 0.3-3 mSv [ped] | 3 | 3 | 5 | 1 | 5 | 4 | 2 | 2 | 0 | 0 | 0 |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 3 | 3 | 6 | 1 | 3 | 6 | 1 | 1 | 1 | 0 | 0 |
| Arteriography cervicocerebral | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 3 | 3 | 8 | 1 | 2 | 2 | 4 | 1 | 1 | 0 | 0 |
| CT head perfusion with IV contrast | Usually not appropriate | Limited | ☼☼☼ 1-10 mSv | | 2 | 2 | 8 | 2 | 5 | 4 | 0 | 0 | 0 | 0 | 0 |
| | | References | Study Quality | | | | | | | | | | | | |
| | | 100 (24172883) | 3 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| MRI head perfusion with IV contrast | Usually not appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 8 | 3 | 4 | 3 | 1 | 0 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 100 (24172883) | | 3 | | | | | | | | | | | |
| CTA neck with IV contrast | Usually not appropriate | Expert Consensus | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕ 0.3-3 mSv [ped] | 1 | 1 | 16 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| MRA head without IV contrast | Usually not appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 12 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 5 (34794589) | | 4 | | | | | | | | | | | |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 15 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| MRA neck without IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 15 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| MRA neck without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 15 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| US duplex Doppler carotid artery | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 16 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| US duplex Doppler transcranial | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Variant 9: Adult. Asymptomatic cervical bruit. Initial imaging.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|----------------------------------|--------------------------|----------------|------------|---------------|--------|--------|-------------------|---|---|---|---|---|---|---|----|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| US duplex Doppler carotid artery | Usually appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 9 | 9 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 2 | 12 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 120 (15944595) | | M | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| CTA head with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 2 | 2 | 6 | 5 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRA head without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 2 | 2 | 9 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRI head without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 2 | 2 | 8 | 5 | 4 | 2 | 0 | 0 | 0 | 0 | 0 |
| MRI head perfusion with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 2 | 2 | 9 | 3 | 3 | 1 | 3 | 0 | 0 | 0 | 0 |
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼ 0.3-3 mSv [ped] | 1 | 1 | 14 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 1 | 1 | 14 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| CT head perfusion with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | | 1 | 1 | 13 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| Arteriography cervicocerebral | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 1 | 1 | 11 | 2 | 4 | 2 | 0 | 0 | 0 | 0 | 0 |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 13 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 0 |
| MRI head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 10 | 4 | 2 | 1 | 1 | 0 | 0 | 1 | 0 |
| US duplex Doppler transcranial | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 11 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| MRV head without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 12 | 5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| CTV head with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 1 | 1 | 14 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| MRV head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 12 | 4 | 2 | 0 | 0 | 0 | 1 | 0 | 0 |

| | |
|----------------|---|
| 27 (19164440) | 2 |
| 85 (26077590) | 2 |
| 119 (24008170) | 1 |
| 118 (23988640) | 4 |
| 117 (32877415) | 2 |
| 114 (30378455) | 4 |
| 113 (29896980) | 2 |

| | | | | | | | | | | | | | | | |
|------------------------------------|-----------------------------------|------------------|--------------|---------------------|---|---|---|---|----|---|---|---|---|---|---|
| MRI head without IV contrast | May be appropriate (Disagreement) | Expert Opinion | 0 0 mSv | 0 0 mSv [ped] | 5 | 5 | 3 | 0 | 0 | 5 | 6 | 4 | 0 | 0 | 1 |
| CTA head with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 3 | 3 | 7 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT head without IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹ 0.3-3 mSv [ped] | 3 | 3 | 7 | 2 | 8 | 1 | 0 | 1 | 0 | 0 | 0 |
| CT head perfusion with IV contrast | Usually not appropriate | Limited | ☹☹☹ 1-10 mSv | | 2 | 2 | 9 | 2 | 4 | 2 | 2 | 0 | 0 | 0 | 0 |

| | |
|----------------|---------------|
| References | Study Quality |
| 124 (28255464) | 2 |

| | | | | | | | | | | | | | | | |
|-------------------------------------|-------------------------|------------------|--------------|---------------------|---|---|---|---|---|---|---|---|---|---|---|
| Arteriography cervicocerebral | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 2 | 2 | 9 | 1 | 3 | 1 | 4 | 1 | 0 | 0 | 0 |
| MRA head without IV contrast | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 2 | 2 | 8 | 3 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRI head perfusion with IV contrast | Usually not appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 2 | 2 | 6 | 4 | 7 | 1 | 0 | 0 | 1 | 0 | 0 |

| | |
|----------------|---------------|
| References | Study Quality |
| 124 (28255464) | 2 |

| | | | | | | | | | | | | | | | |
|--------------------------|-------------------------|------------------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹ 0.3-3 mSv [ped] | 1 | 1 | 13 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
|--------------------------|-------------------------|------------------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 1 | 1 | 11 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 11 | 2 | 4 | 1 | 0 | 0 | 1 | 0 | 0 |
| MRI head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 11 | 1 | 5 | 0 | 2 | 0 | 0 | 0 | 0 |
| US duplex Doppler transcranial | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| MRV head without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| CTV head with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 1 | 1 | 14 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRV head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 14 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |

Variant 11: Adult. Suspected cervical vascular dissection or injury. Initial imaging.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---------------------------------------|--------------------------|---------|----------------|---------------------|--------|--------|-------------------|---|---|---|---|---|---|---|----|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CTA neck with IV contrast | Usually appropriate | Limited | ☹☹☹ 1-10 mSv | ☹☹☹ 0.3-3 mSv [ped] | 9 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13 |
| | | | References | Study Quality | | | | | | | | | | | |
| | | | 131 (27767400) | 4 | | | | | | | | | | | |
| | | | 130 (18635617) | 2 | | | | | | | | | | | |
| | | | 129 (29853818) | 4 | | | | | | | | | | | |
| MRA neck without and with IV contrast | Usually appropriate | Limited | ○ 0 mSv | ○ 0 mSv [ped] | 8 | 8 | 1 | 0 | 0 | 0 | 1 | 1 | 5 | 6 | 5 |
| | | | References | Study Quality | | | | | | | | | | | |
| | | | 129 (29853818) | 4 | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|--------------|---------------------|---------------|---|----|---|---|---|----|---|----|---|---|
| | | 132 (24384680) | | | 2 | | | | | | | | | | |
| CT head without IV contrast | Usually appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹ 0.3-3 mSv [ped] | 7 | 7 | 0 | 0 | 0 | 0 | 6 | 3 | 8 | 0 | 2 |
| MRA neck without IV contrast | Usually appropriate | Limited | ○ 0 mSv | ○ 0 mSv [ped] | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 5 | 3 |
| | | References | | | Study Quality | | | | | | | | | | |
| | | 129 (29853818) | | | 4 | | | | | | | | | | |
| | | 132 (24384680) | | | 2 | | | | | | | | | | |
| CTA head with IV contrast | May be appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 1 | 13 | 3 | 1 | 1 | 0 |
| MRA head without IV contrast | May be appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 5 | 5 | 1 | 0 | 3 | 2 | 11 | 2 | 0 | 0 | 0 |
| MRI head without IV contrast | May be appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 5 | 5 | 0 | 0 | 1 | 0 | 13 | 3 | 1 | 0 | 1 |
| Arteriography cervicocerebral | Usually not appropriate | Strong | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 2 | 2 | 9 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | References | | | Study Quality | | | | | | | | | | |
| | | 128 (26478890) | | | 4 | | | | | | | | | | |
| | | 127 (22198988) | | | 2 | | | | | | | | | | |
| | | 126 (10568710) | | | 2 | | | | | | | | | | |
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹ 0.3-3 mSv [ped] | 1 | 1 | 12 | 3 | 3 | 0 | 0 | 0 | 0 | 1 | 0 |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 1 | 1 | 13 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| CT head perfusion with IV contrast | Usually not appropriate | Expert Consensus | ☹☹☹ 1-10 mSv | | 1 | 1 | 12 | 2 | 4 | 0 | 0 | 1 | 0 | 0 | 0 |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 13 | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 0 |

| | | | | | | | | | | | | | | | | | |
|---------------------------------------|-----------------------------------|------------------|----------------|---------------------|---------------|---|----|---|---|---|---|---|----|---|---|--|--|
| | | | 132 (24384680) | | 2 | | | | | | | | | | | | |
| MRA neck without and with IV contrast | Usually appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 3 | 2 | | |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 129 (29853818) | | 4 | | | | | | | | | | | | |
| | | | 132 (24384680) | | 2 | | | | | | | | | | | | |
| MRA head without IV contrast | May be appropriate (Disagreement) | Expert Opinion | 0 0 mSv | 0 0 mSv [ped] | 5 | 5 | 3 | 2 | 0 | 9 | 2 | 3 | 0 | 0 | 0 | | |
| CTA head with IV contrast | May be appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 4 | 4 | 1 | 1 | 1 | 9 | 5 | 2 | 0 | 0 | 0 | | |
| Arteriography cervicocerebral | May be appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 4 | 4 | 1 | 0 | 1 | 9 | 6 | 2 | 0 | 0 | 0 | | |
| CT head without IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼ 0.3-3 mSv [ped] | 3 | 3 | 7 | 2 | 5 | 0 | 4 | 1 | 0 | 0 | 0 | | |
| MRI head without IV contrast | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 3 | 3 | 6 | 1 | 3 | 9 | 0 | 0 | 0 | 0 | 0 | | |
| US duplex Doppler carotid artery | Usually not appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 2 | 2 | 9 | 6 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | | |
| | | | References | | Study Quality | | | | | | | | | | | | |
| | | | 137 (20962286) | | 2 | | | | | | | | | | | | |
| CT head with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼ 0.3-3 mSv [ped] | 1 | 1 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| CT head without and with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 1 | 1 | 14 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| CT head perfusion with IV contrast | Usually not appropriate | Expert Consensus | ☼☼☼ 1-10 mSv | | 1 | 1 | 11 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | | |
| MRA head without and with IV contrast | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 1 | 1 | 14 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | |

| | | | | | | | | | | | | | | | |
|---------------------------------------|-------------------------|------------------|--------------|---------------------|---|---|----|---|---|---|---|---|---|---|---|
| MRI head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 11 | 2 | 1 | 1 | 2 | 2 | 0 | 0 | 0 |
| MRI head perfusion with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 11 | 3 | 3 | 1 | 0 | 1 | 0 | 0 | 0 |
| US duplex Doppler transcranial | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 12 | 2 | 2 | 0 | 1 | 2 | 0 | 0 | 0 |
| MRV head without IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CTV head with IV contrast | Usually not appropriate | Expert Consensus | ⊗⊗⊗ 1-10 mSv | ⊗⊗⊗⊗ 3-10 mSv [ped] | 1 | 1 | 14 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRV head without and with IV contrast | Usually not appropriate | Expert Consensus | ○ 0 mSv | ○ 0 mSv [ped] | 1 | 1 | 15 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

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.