# American College of Radiology
# ACR Appropriateness Criteria®

## Tracheobronchial Disease

**Variant 1:**    **Adult. Clinically suspected tracheal or bronchial stenosis. Initial imaging.**

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT chest without IV contrast | Usually appropriate | Strong | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 8 | 2 |

| References | Study Quality |
|---|---|
| 21 (17430592) | 2 |
| 22 (11752944) | 2 |
| 19 (33992979) | 2 |
| 20 (14605057) | 2 |
| 23 (22013293) | 4 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CT chest with IV contrast | Usually appropriate | Strong | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 7 | 7 | 0 | 0 | 0 | 0 | 5 | 1 | 4 | 1 | 3 |

| References | Study Quality |
|---|---|
| 21 (17430592) | 2 |
| 22 (11752944) | 2 |
| 19 (33992979) | 2 |
| 20 (14605057) | 2 |
| 23 (22013293) | 4 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Radiography chest | Usually appropriate | Limited | ☢ <0.1 mSv | ☢ <0.03 mSv [ped] | 7 | 7 | 0 | 0 | 0 | 0 | 2 | 1 | 5 | 4 | 1 |

| References | Study Quality |
|---|---|

| Procedure | Appropriateness Category | | Adult RRL | Pediatric RRL | 22 (11752944) | | 2 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CTA chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 1 | 1 | 2 | 0 | 8 | 2 | 0 | 0 | 0 |
| CT neck and chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 1 | 9 | 1 | 2 | 0 | 0 |
| CT neck and chest without IV contrast | May be appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 0 | 8 | 1 | 4 | 0 | 0 |
| MRI chest without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 3 | 3 | 4 | 3 | 4 | 0 | 2 | 1 | 0 | 0 | 0 |
| CT neck with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 2 | 2 | 3 | 5 | 1 | 1 | 2 | 0 | 1 | 0 | 0 |
| CT neck without IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 2 | 2 | 3 | 5 | 1 | 1 | 3 | 0 | 0 | 0 | 0 |
| MRI chest without IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 6 | 2 | 3 | 0 | 3 | 0 | 0 | 0 | 0 |
| Radiography neck | Usually not appropriate | Expert Consensus | ☢☢ 0.1-1mSv | | 2 | 2 | 4 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| CT neck and chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 2 | 2 | 6 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT neck without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 8 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| FDG-PET/CT skull base to mid-thigh | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 9 | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 0 |

**Variant 2:   Adult. Tracheal or bronchial stenosis. Pre- or posttreatment assessment.**

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT chest without IV contrast | Usually appropriate | Strong | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 7 | 2 |

| References | Study Quality |
|---|---|
| 24 (25384279) | 4 |
| 12 (26332466) | 4 |
| 11 (8784012) | 4 |
| 13 (19002699) | 2 |
| 25 (23168655) | 4 |
| 26 (11776117) | 2 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CT chest with IV contrast | Usually appropriate | Strong | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 7 | 7 | 0 | 0 | 1 | 0 | 4 | 1 | 3 | 2 | 3 |

| References | Study Quality |
|---|---|
| 24 (25384279) | 4 |
| 12 (26332466) | 4 |
| 19 (33992979) | 2 |
| 11 (8784012) | 4 |
| 13 (19002699) | 2 |
| 25 (23168655) | 4 |
| 26 (11776117) | 2 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Radiography chest | Usually appropriate | Expert Consensus | ☢ <0.1 mSv | ☢ <0.03 mSv [ped] | 7 | 7 | 1 | 0 | 0 | 0 | 4 | 0 | 3 | 3 | 2 |
| CT neck and chest without IV contrast | May be appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 6 | 6 | 0 | 1 | 0 | 1 | 4 | 2 | 2 | 3 | 1 |
| CTA chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 1 | 11 | 1 | 0 | 0 | 0 |

| Procedure | Appropriateness | Recommendation | Adult RRL | Pediatric RRL | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CT neck without IV contrast | May be appropriate (Disagreement) | Expert Opinion | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 5 | 5 | 3 | 5 | 1 | 0 | 2 | 0 | 2 | 0 | 0 |
| FDG-PET/CT skull base to mid-thigh | May be appropriate | Strong | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 2 | 2 | 6 | 3 | 0 | 0 | 0 |

| References | Study Quality |
|---|---|
| 27 (27055141) | 2 |
| 28 (33236543) | 2 |

| Procedure | Appropriateness | Recommendation | Adult RRL | Pediatric RRL | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CT neck and chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 0 | 12 | 0 | 1 | 0 | 0 |
| MRI chest without IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 3 | 3 | 4 | 3 | 3 | 2 | 2 | 0 | 0 | 0 | 0 |
| MRI chest without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 3 | 3 | 4 | 3 | 3 | 2 | 2 | 0 | 0 | 0 | 0 |
| CT chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 2 | 2 | 5 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT neck with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 2 | 2 | 2 | 6 | 1 | 0 | 3 | 1 | 0 | 0 | 0 |
| CT neck without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 2 | 2 | 7 | 1 | 1 | 1 | 3 | 0 | 1 | 0 | 0 |
| Radiography neck | Usually not appropriate | Expert Consensus | ☢☢ 0.1-1mSv | | 2 | 2 | 6 | 2 | 1 | 1 | 4 | 0 | 0 | 0 | 0 |
| CT neck and chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

**Variant 3:    Adult. Clinically suspected tracheomalacia or bronchomalacia. Initial imaging.**

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT chest without IV contrast | Usually appropriate | Strong | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 9 | 9 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 9 |

| References | Study Quality |
|---|---|
| 31 (24361144) | 3 |
| 30 (11419175) | 2 |
| 17 (19420322) | 2 |
| 29 (15798155) | 2 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Radiography chest | May be appropriate (Disagreement) | Expert Opinion | ☢ <0.1 mSv | ☢ <0.03 mSv [ped] | 5 | 5 | 0 | 4 | 1 | 2 | 0 | 0 | 3 | 2 | 1 |
| CT neck and chest without IV contrast | May be appropriate (Disagreement) | Expert Opinion | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 1 | 2 | 1 | 5 | 2 | 2 | 0 | 0 |
| CT chest with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 3 | 3 | 3 | 1 | 5 | 0 | 3 | 1 | 1 | 0 | 0 |
| CTA chest with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 2 | 2 | 5 | 3 | 0 | 1 | 4 | 1 | 0 | 0 | 0 |
| CT neck with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 2 | 2 | 3 | 5 | 2 | 0 | 3 | 1 | 0 | 0 | 0 |
| CT neck without IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 2 | 2 | 4 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRI chest without IV contrast | Usually not appropriate | Strong | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 5 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

| References | Study Quality |
|---|---|
| 32 (28796542) | 2 |
| 33 (15517280) | 2 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| MRI chest without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 6 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Radiography neck | Usually not appropriate | Expert Consensus | ☢☢ 0.1-1mSv |  | 2 | 2 | 7 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 |
| CT neck and chest with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 2 | 2 | 3 | 5 | 1 | 1 | 3 | 0 | 0 | 0 | 1 |
| CT chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 9 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 0 |
| CT neck without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 8 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| FDG-PET/CT skull base to mid-thigh | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 11 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| CT neck and chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

**Variant 4:   Adult. Tracheomalacia or bronchomalacia. Pre- or posttreatment assessment.**

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT chest without IV contrast | Usually appropriate | Strong | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 4 | 4 |

| References | Study Quality |
|---|---|
| 30 (11419175) | 2 |
| 36 (18520570) | 2 |
| 8 (29957676) | 2 |
| 35 (15855094) | 4 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CTA chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 2 | 0 | 1 | 8 | 1 | 1 | 0 | 0 |

| Procedure | Appropriateness | Consensus | Adult RRL | Pediatric RRL | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CT chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 0 | 8 | 4 | 1 | 0 | 0 |
| CT neck and chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 1 | 0 | 10 | 1 | 1 | 0 | 0 |
| CT neck and chest without IV contrast | May be appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 1 | 11 | 0 | 1 | 0 | 0 |
| Radiography chest | Usually not appropriate | Expert Consensus | ☢ <0.1 mSv | ☢ <0.03 mSv [ped] | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 1 | 1 | 0 | 0 |
| CT neck with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 2 | 2 | 4 | 4 | 2 | 0 | 3 | 0 | 1 | 0 | 0 |
| CT neck without IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 2 | 2 | 5 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| MRI chest without IV contrast | Usually not appropriate | Strong | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 5 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |

| References | Study Quality |
|---|---|
| 32 (28796542) | 2 |
| 33 (15517280) | 2 |

| Procedure | Appropriateness | Consensus | Adult RRL | Pediatric RRL | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MRI chest without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 6 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Radiography neck | Usually not appropriate | Expert Consensus | ☢☢ 0.1-1mSv | | 2 | 2 | 6 | 2 | 4 | 0 | 2 | 0 | 0 | 0 | 0 |
| CT chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 9 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 |
| CT neck without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 9 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| FDG-PET/CT skull base to mid-thigh | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 10 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CT neck and chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

**Variant 5:   Adult. Clinically suspected bronchiectasis. Initial imaging.**

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT chest without IV contrast | Usually appropriate | Strong | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 9 |

| References | Study Quality |
|---|---|
| 37 (18195376) | 4 |
| 43 (32843159) | 4 |
| 38 (10397098) | 2 |
| 39 (8536394) | 2 |
| 40 (20627931) | 4 |
| 41 (7618537) | 2 |
| 44 (24328736) | 2 |
| 45 (10397099) | 2 |
| 42 (34292274) | 2 |
| 46 (27296814) | 2 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Radiography chest | Usually appropriate | Limited | ☢ <0.1 mSv | ☢ <0.03 mSv [ped] | 7 | 7 | 1 | 0 | 0 | 0 | 3 | 1 | 6 | 2 | 1 |

| References | Study Quality |
|---|---|
| 9 (30442957) | 4 |
| 10 (26024063) | 4 |
| 40 (20627931) | 4 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CTA chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 2 | 1 | 0 | 8 | 1 | 1 | 0 | 0 |

| Procedure | Appropriateness | Evidence | Adult RRL | Pediatric RRL | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MRI chest without IV contrast | May be appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 4 | 4 | 5 | 0 | 2 | 3 | 2 | 1 | 1 | 0 | 0 |

| | References | | Study Quality | |
|---|---|---|---|---|
| | 47 (26707785) | | 2 | |

| Procedure | Appropriateness | Evidence | Adult RRL | Pediatric RRL | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CT chest with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 2 | 2 | 2 | 5 | 3 | 0 | 2 | 0 | 0 | 1 | 0 |
| CT chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 7 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT neck with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 1 | 1 | 10 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| CT neck without IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 1 | 1 | 10 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT neck without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 11 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| MRI chest without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 8 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 |
| FDG-PET/CT skull base to mid-thigh | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Radiography neck | Usually not appropriate | Expert Consensus | ☢☢ 0.1-1mSv | | 1 | 1 | 11 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| CT neck and chest with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 8 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 |
| CT neck and chest without IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 9 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 |
| CT neck and chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 10 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 |

**Variant 6:    Adult. Bronchiectasis. Assessment of complications or treatment response.**

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT chest without IV contrast | Usually appropriate | Strong | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 4 | 6 |

| References | Study Quality |
|---|---|
| 52 (28968457) | 2 |
| 54 (28427555) | 2 |
| 49 (28150579) | 2 |
| 43 (32843159) | 4 |
| 40 (20627931) | 4 |
| 50 (30531034) | 2 |
| 55 (33172424) | 2 |
| 53 (24059365) | 2 |
| 42 (34292274) | 2 |
| 56 (34380092) | 2 |
| 51 (28275170) | 2 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Radiography chest | Usually appropriate | Limited | ☢ <0.1 mSv | ☢ <0.03 mSv [ped] | 7 | 7 | 0 | 0 | 0 | 0 | 3 | 1 | 3 | 2 | 2 |

| References | Study Quality |
|---|---|
| 40 (20627931) | 4 |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CTA chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 1 | 0 | 1 | 8 | 2 | 1 | 0 | 0 |
| CT chest with IV contrast | May be appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 5 | 5 | 0 | 1 | 0 | 2 | 9 | 1 | 0 | 0 | 0 |
| MRI chest without IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 2 | 2 | 6 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |

| Procedure | Appropriateness Category | Appropriateness Category (Further Comments) | Adult RRL | Pediatric RRL | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CT chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 8 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT neck with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 1 | 1 | 9 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 |
| CT neck without IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 1 | 1 | 10 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT neck without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 11 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| MRI chest without and with IV contrast | Usually not appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 1 | 1 | 9 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 |
| FDG-PET/CT skull base to mid-thigh | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Radiography neck | Usually not appropriate | Expert Consensus | ☢☢ 0.1-1mSv | | 1 | 1 | 11 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT neck and chest with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 8 | 2 | 2 | 0 | 1 | 0 | 0 | 1 | 0 |
| CT neck and chest without IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 8 | 1 | 4 | 0 | 0 | 0 | 1 | 0 | 0 |
| CT neck and chest without and with IV contrast | Usually not appropriate | Expert Consensus | ☢☢☢☢ 10-30 mSv | ☢☢☢☢ 3-10 mSv [ped] | 1 | 1 | 10 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 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.**