

American College of Radiology
ACR Appropriateness Criteria®

Acute Pancreatitis

Variant 1: Suspected acute pancreatitis. First time presentation. Epigastric pain and increased amylase and lipase. Less than 48 to 72 hours after symptom onset. Initial imaging.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|---|--------------------------|---------------|--------------|---------------------|--------|--------|-------------------|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| US abdomen | Usually appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 8 | 8 | 0 | 0 | 0 | 1 | 4 | 1 | 1 | 8 | 2 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 14 (26209440) | | 3 | | | | | | | | | | | |
| | | 15 (24512896) | | 4 | | | | | | | | | | | |
| | | 12 (24679420) | | 4 | | | | | | | | | | | |
| CT abdomen and pelvis with IV contrast | May be appropriate | Limited | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 2 | 6 | 8 | 1 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 4 (12034923) | | 4 | | | | | | | | | | | |
| | | 7 (22186977) | | 3 | | | | | | | | | | | |
| | | 1 (28840381) | | 3 | | | | | | | | | | | |
| | | 6 (27426674) | | 3 | | | | | | | | | | | |
| | | 5 (25239388) | | 3 | | | | | | | | | | | |
| | | 8 (25078061) | | 3 | | | | | | | | | | | |
| MRI abdomen without IV contrast with MRCP | May be appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 5 | 5 | 0 | 0 | 2 | 6 | 9 | 0 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 9 (18253063) | | 3 | | | | | | | | | | | |

[illegible]

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|--|--------------------------|---------------|--------------|---------------------|--------|--------|-------------------|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT abdomen and pelvis with IV contrast | Usually appropriate | Limited | ☹☹☹ 1-10 mSv | ☹☹☹☹ 3-10 mSv [ped] | 8 | 8 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 7 | 7 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 16 (19896558) | | 4 | | | | | | | | | | | |
| | | 14 (26209440) | | 3 | | | | | | | | | | | |
| | | 3 (23100216) | | 4 | | | | | | | | | | | |
| MRI abdomen without and with IV contrast with MRCP | Usually appropriate | Limited | ○ 0 mSv | ○ 0 mSv [ped] | 7 | 7 | 0 | 0 | 1 | 0 | 2 | 5 | 4 | 4 | 1 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 6 (27426674) | | 3 | | | | | | | | | | | |
| | | 18 (26102416) | | 4 | | | | | | | | | | | |
| | | 20 (25457519) | | 2 | | | | | | | | | | | |
| | | 8 (25078061) | | 3 | | | | | | | | | | | |
| | | 19 (25585483) | | 4 | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|--|-------------------------|------------------|----------------|-----------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | 3 (23100216) | | 4 | | | | | | | | | | | |
| | | 21 (22584543) | | 4 | | | | | | | | | | | |
| US abdomen | May be appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 5 | 5 | 0 | 1 | 5 | 2 | 4 | 4 | 1 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 21 (22584543) | | 4 | | | | | | | | | | | |
| US duplex Doppler abdomen | May be appropriate | Expert Consensus | O 0 mSv | O 0 mSv [ped] | 4 | 4 | 0 | 2 | 3 | 6 | 2 | 3 | 0 | 1 | 0 |
| CT abdomen and pelvis without and with IV contrast | Usually not appropriate | Strong | ☼☼☼☼ 10-30 mSv | ☼☼☼☼☼ 10-30 mSv [ped] | 3 | 3 | 3 | 2 | 4 | 0 | 8 | 0 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 27 (27592205) | | 2 | | | | | | | | | | | |
| | | 26 (25425489) | | 2 | | | | | | | | | | | |
| | | 3 (23100216) | | 4 | | | | | | | | | | | |
| | | 21 (22584543) | | 4 | | | | | | | | | | | |
| US abdomen with IV contrast | Usually not appropriate | Limited | O 0 mSv | O 0 mSv [ped] | 3 | 3 | 1 | 2 | 6 | 6 | 1 | 0 | 1 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 15 (24512896) | | 4 | | | | | | | | | | | |
| | | 28 (24574783) | | 3 | | | | | | | | | | | |

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|--|--------------------------|------------|--------------|---------------------|--------|--------|-------------------|---|---|---|---|---|---|---|----|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT abdomen and pelvis with IV contrast | Usually appropriate | Limited | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 |
| | | References | | Study Quality | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|--|-------------------------|------------------|----------------|-----------------------|---------------|---|---|---|---|---|----|---|---|---|---|--|
| | | 29 (24441591) | | | 1 | | | | | | | | | | | |
| MRI abdomen without and with IV contrast with MRCP | May be appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 6 | 6 | 0 | 0 | 0 | 0 | 7 | 9 | 0 | 1 | 0 | |
| | | References | | | Study Quality | | | | | | | | | | | |
| | | 29 (24441591) | | | 1 | | | | | | | | | | | |
| CT abdomen and pelvis without IV contrast | May be appropriate | Limited | ☼☼☼ 1-10 mSv | ☼☼☼☼ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 1 | 1 | 8 | 2 | 4 | 1 | 0 | |
| | | References | | | Study Quality | | | | | | | | | | | |
| | | 29 (24441591) | | | 1 | | | | | | | | | | | |
| CT abdomen and pelvis without and with IV contrast | May be appropriate | Limited | ☼☼☼☼ 10-30 mSv | ☼☼☼☼☼ 10-30 mSv [ped] | 5 | 5 | 0 | 0 | 1 | 5 | 6 | 4 | 1 | 0 | 0 | |
| | | References | | | Study Quality | | | | | | | | | | | |
| | | 29 (24441591) | | | 1 | | | | | | | | | | | |
| MRI abdomen without IV contrast with MRCP | May be appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 4 | 12 | 0 | 1 | 0 | 0 | |
| | | References | | | Study Quality | | | | | | | | | | | |
| | | 29 (24441591) | | | 1 | | | | | | | | | | | |
| US abdomen | May be appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 4 | 4 | 0 | 3 | 4 | 4 | 4 | 2 | 0 | 0 | 0 | |
| US duplex Doppler abdomen | May be appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 4 | 4 | 0 | 3 | 5 | 6 | 1 | 2 | 0 | 0 | 0 | |
| US abdomen with IV contrast | Usually not appropriate | Limited | 0 0 mSv | 0 0 mSv [ped] | 3 | 3 | 0 | 3 | 8 | 4 | 2 | 0 | 0 | 0 | 0 | |
| | | References | | | Study Quality | | | | | | | | | | | |
| | | 28 (24574783) | | | 3 | | | | | | | | | | | |

Variant 6: Acute pancreatitis. Known pancreatic or peripancreatic fluid collections with continued abdominal pain, early satiety, nausea, vomiting, or signs of infection. Greater than 4 weeks after symptom onset.

| Procedure | Appropriateness Category | SOE | Adults RRL | Peds RRL | Rating | Median | Final Tabulations | | | | | | | | |
|--|--------------------------|------------------|--------------|---------------------|--------|--------|-------------------|---|---|---|----|---|---|---|----|
| | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| CT abdomen and pelvis with IV contrast | Usually appropriate | Limited | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 10 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 26 (25425489) | | 2 | | | | | | | | | | | |
| MRI abdomen without and with IV contrast with MRCP | Usually appropriate | Strong | ○ ○ mSv | ○ ○ mSv [ped] | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 9 | 4 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 31 (26730150) | | 4 | | | | | | | | | | | |
| | | 26 (25425489) | | 2 | | | | | | | | | | | |
| | | 22 (24015276) | | 2 | | | | | | | | | | | |
| MRI abdomen without IV contrast with MRCP | May be appropriate | Strong | ○ ○ mSv | ○ ○ mSv [ped] | 6 | 6 | 0 | 0 | 0 | 1 | 4 | 4 | 5 | 3 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 31 (26730150) | | 4 | | | | | | | | | | | |
| | | 26 (25425489) | | 2 | | | | | | | | | | | |
| | | 22 (24015276) | | 2 | | | | | | | | | | | |
| CT abdomen and pelvis without IV contrast | May be appropriate | Limited | ⊕⊕⊕ 1-10 mSv | ⊕⊕⊕⊕ 3-10 mSv [ped] | 5 | 5 | 0 | 0 | 0 | 4 | 10 | 3 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 26 (25425489) | | 2 | | | | | | | | | | | |
| US abdomen | May be appropriate | Limited | ○ ○ mSv | ○ ○ mSv [ped] | 5 | 5 | 0 | 0 | 2 | 6 | 6 | 3 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 21 (22584543) | | 4 | | | | | | | | | | | |
| US duplex Doppler abdomen | May be appropriate | Expert Consensus | ○ ○ mSv | ○ ○ mSv [ped] | 4 | 4 | 0 | 2 | 5 | 6 | 2 | 1 | 1 | 0 | 0 |

| | | | | | | | | | | | | | | | |
|---|----------------------------|---------------------|-------------------|---------------------------------|---|---|---|---|---|---|---|---|---|---|---|
| CT abdomen and pelvis without and with IV contrast | Usually not appropriate | Limited | ☢☢☢☢ 10-30 mSv | ☢☢☢☢☢☢ 10-30 mSv [ped] | 3 | 3 | 2 | 4 | 5 | 0 | 4 | 2 | 0 | 0 | 0 |
| | | References | | Study Quality | | | | | | | | | | | |
| | | 26 (25425489) | | 2 | | | | | | | | | | | |
| US abdomen with IV contrast | Usually not appropriate | Expert Consensus | 0 0 mSv | 0 0 mSv [ped] | 3 | 3 | 1 | 4 | 7 | 4 | 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.