### Antenatal Hydronephrosis-Infant

**Variant 1:** Antenatal diagnosis of hydronephrosis. Initial neonatal imaging.

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**DTPA renal scan**

- Usually not appropriate
- Expert Consensus
- ☢☢☢ 1-10 mSv
- ☢☢☢ 0.3-3 mSv [ped]
- Rating: 1, 1, 17, 2, 0, 0, 0, 0, 0, 0

**MAG3 renal scan**

- Usually not appropriate
- Expert Consensus
- ☢☢☢ 1-10 mSv
- ☢☢☢ 0.3-3 mSv [ped]
- Rating: 1, 1, 17, 1, 0, 1, 0, 0, 0, 0

**MRI abdomen and pelvis with IV contrast**

- Usually not appropriate
- Expert Consensus
- O 0 mSv
- O 0 mSv [ped]
- Rating: 1, 1, 17, 2, 0, 0, 0, 0, 0, 0

** Variant 2:** Antenatal diagnosis of hydronephrosis with normal neonatal ultrasound.

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**Fluoroscopy voiding cystourethrography**

- Usually not appropriate
- Limited
- ☢ 0.1-1 mSv
- ☢ 0.03-0.3 mSv [ped]
- Rating: 3, 3, 5, 3, 3, 2, 6, 0, 0, 0

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Variant 4: Male. Antenatal diagnosis of hydronephrosis with moderate or severe (SFU grade 3 or 4 or APRPD greater than 15 mm) hydronephrosis on initial neonatal ultrasound, or hydronephrosis associated with parenchymal abnormalities, hydroureter, bladder wall thickening, or posterior urethral dilation.

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**Variant 5:** Female. Antenatal diagnosis of hydronephrosis with moderate or severe (SFU grade 3 or 4 or APRPD greater than 15 mm) hydronephrosis on initial neonatal ultrasound, or hydronephrosis associated with parenchymal abnormalities, hydroureter, bladder wall thickening.
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<td>☐ 0 mSv [ped]</td>
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<td>9</td>
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References:

- US kidneys and bladder follow-up in 1-6 months
  - 1 (21683656)
  - 23 (22506510)
  - 50 (24927968)
  - 34 (22797098)
  - 21 (17653772)
  - 52 (17619702)
  - 53 (19484161)
  - 55 (20713223)
  - 54 (16945650)

- Fluoroscopy voiding cystourethrography
  - 3 (25435247)
  - 20 (16427220)
  - 12 (18071685)
  - 26 (16025288)
  - 28 (15197477)
  - 29 (22836304)
  - 50 (24927968)
  - 31 (20650494)
  - 57 (19239817)
  - 51 (16882811)
  - 60 (25813560)
  - 56 (20524012)
### MAG3 renal scan

| Usually appropriate | Strong | ☢☢☢ 1-10 mSv | ☢☢☢ 0.3-3 mSv [ped] | 7 | 7 | 0 | 1 | 0 | 1 | 0 | 1 | 9 | 5 | 1 |
|---------------------|--------|---------------|---------------------|----|----|---|---|---|---|---|---|---|---|---|---|
| References          | Study Quality |
| 4 (20399145)        | 4      |
| 20 (16427220)       | 4      |
| 29 (22836304)       | 4      |
| 62 (21830021)       | 2      |
| 52 (17619702)       | 4      |
| 53 (19484161)       | 4      |
| 63 (15148596)       | 2      |
| 73 (22570256)       | 3      |
| 55 (20713223)       | 2      |
| 72 (24206785)       | 4      |
| 70 (23500640)       | 3      |
| 71 (26165191)       | 2      |
| 69 ()               | 4      |
| 68 ()               | 2      |
| 66 (18631923)       | 3      |
| 67 (15758800)       | 2      |
| 61 (24549283)       | 4      |

### Voiding urosonography

| Usually appropriate | Strong | O 0 mSv | O 0 mSv [ped] | 7 | 7 | 1 | 0 | 0 | 4 | 1 | 7 | 4 | 1 |
|---------------------|--------|---------|---------------|----|----|---|---|---|---|---|---|---|---|---|
| References          | Study Quality |
| 41 (16086170)       | 4      |
| 42 (17520246)       | 1      |
| 43 (20686902)       | 3      |
| 44 (24659313)       | 2      |
| 45 (26597418)       | 3      |

### Nuclear medicine cystography

| May be appropriate (Disagreement) | Expert Opinion | ☢☢☢ 0.03-0.3 mSv [ped] | 5 | 5 | 0 | 1 | 1 | 4 | 8 | 1 | 1 | 1 | 1 |
### MRI abdomen and pelvis without and with IV contrast

**Study**
- **MRI abdomen and pelvis without and with IV contrast:** Usually not appropriate
- **DTPA renal scan:** Usually not appropriate

<table>
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<tr>
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<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
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### References
- 46 (6462809)
- 47 (11122000)

- **References**
- **Study Quality**

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<th>Adults RRL</th>
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**Variant 6:** Antenatal diagnosis of hydronephrosis with moderate or severe (SFU grade 3 or 4 or APRPD greater than 15 mm) hydronephrosis on initial neonatal ultrasound and no evidence of reflux on VCUG.
<table>
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<tr>
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<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
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**References**

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**Final Tabulations**

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**Study Quality**

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**Notes:**
- Appropriateness: Usually appropriate
- SOE: mSv
- Adults RRL: 3 mSv
- Peds RRL: [ped]
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<th>Radiation Dose</th>
<th>Study Quality</th>
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<td>☢☢☢ 0.3-3 mSv [ped]</td>
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<tr>
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<tr>
<td><strong>MRI abdomen and pelvis without and with IV contrast</strong></td>
<td>May be appropriate</td>
<td>Expert Consensus</td>
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<tr>
<td><strong>MRI abdomen and pelvis with IV contrast</strong></td>
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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.