**American College of Radiology**  
**ACR Appropriateness Criteria®**

**Primary Bone Tumors**

**Variant 1:** Suspect primary bone tumor. Initial imaging.

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**Variant 2:** Suspect primary bone tumor. Radiographs negative or do not explain symptoms. Next imaging study.

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12 (2120933) 2

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**Variant 4:** Suspect primary bone tumor. Radiographs or clinical presentation suggest osteoid osteoma. Next imaging study.

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**Variant 5:** Suspect primary bone tumor. Lesion on radiographs. Indeterminate or aggressive appearance for malignancy. Next imaging study.
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| FDG-PET/CT whole body | May be appropriate | Strong | ☢☢☢☢ 10-30 mSv | 5 | 5 | 1 | 0 | 0 | 1 | 10 | 1 | 1 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| References | Study Quality | |
| 25 (11376267) | 3 |
| 26 (18278491) | 3 |
| 27 (8657920) | 2 |
| 28 (26356700) | Good |
| 29 (18756363) | 3 |
| 30 (22072239) | Good |
| 31 (15286325) | 2 |
| 32 (18309481) | 3 |
| 33 (15937711) | 3 |

| Bone scan whole body with SPECT or SPECT/CT area of interest | May be appropriate | Limited | ☢☢☢ 1-10 mSv | 4 | 4 | 1 | 0 | 0 | 8 | 4 | 1 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| References | Study Quality | |
| 50 (22865157) | 3 |

| Bone scan whole body | Usually not appropriate | Expert Consensus | ☢☢☢ 1-10 mSv | ☢☢☢ 3-10 mSv [ped] | 2 | 2 | 6 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 |

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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](http://www.acr.org/ac).