

Imaging Techniques (SP-2)

- X-rays are first line imaging for suspected inflammatory spine disease¹, following trauma², concerns of spinal deformities³, or post-operative spinal disorders⁴. Although x-rays may not confirm a definitive diagnosis, they provide information that can better direct advanced imaging modalities.
- MRI utilizes a magnetic field and radio waves with computer processing to produce detailed images which have excellent soft tissue characterization and is the primary modality for evaluating the spinal cord, intervertebral disc disease and other soft tissue pathology of the spine.^{5,6,7} Positional MRI⁸ and MR Spectroscopy¹⁷ lacks sufficient scientific evidence to support its routine clinical use.⁸
- CT is indicated as an alternative to MRI when MRI is contraindicated or equivocal^{6,9,10,12}. CT is also indicated for evaluation of bony pathology including but not limited to fractures¹⁰, bony neoplastic disease¹², calcified lesions¹³, post traumatic¹⁰ and perioperative bony processes^{4,11}. Following lumbar discography CT may be approved to evaluate disc anatomy.¹⁶
- CT/Myelography provides indirect visualization of the thecal sack in the spinal canal. MRI is the primary indicated advanced imaging for these indications as the cord, thecal sac, and spinal canal can be directly visualized. CT/Myelography may be indicated when MRI is indeterminate or contraindicated.^{14, 15}
- Ultrasound can be used to visualize the spinal canal in young children before the posterior elements ossify. Ultrasound will not penetrate ossified bone.¹⁸
- MRA has limited indications in spine imaging but may be appropriate for evaluating spinal vascular malformations.¹⁹
- There is inadequate scientific evidence to support the medical necessity of PET/CT for the routine assessment of spinal disorders, other than for neoplastic disease.
- There is inadequate scientific evidence to support the medical necessity of cone beam CT for the routine assessment of spinal disorders outside of the operative setting which is outside the coverage of these guidelines.

References

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