

Evidence Discussion (HD 19.1-19.4)

Pituitary

- MRI imaging of the Sella region using high-resolution pituitary protocols is the preferred diagnostic imaging modality for evaluation of the pituitary and sellar regions and is considered the gold standard for imaging the pituitary gland when there is suspicion of hypothalamic pituitary disease.
- Both the anatomy and pathology of the pituitary gland and surrounding areas including optic chiasm, infundibulum and vascular structures, as well as an empty sella, are reliably depicted on MRI.
- MRI is the most sensitive imaging study for evaluating pituitary disease.
- CT of the Sella can be used to detect bone destructive lesions of the skull base, such as craniopharyngiomas, meningiomas, or larger pituitary macroadenomas, but CT is insensitive when compared to MRI for pituitary pathology.
- MRI utilizes a magnetic field and radio waves with computer processing to produce detailed images whereas CT uses ionizing radiation. Radiation dosages vary based on many factors and can be harmful to tissues. Thus, from radiation safety perspective MRI should be utilized when appropriate and supported by existing literature. .

References:

1. Expert Panel on Neurologic Imaging:, Burns J, Policeni B, et al. ACR Appropriateness Criteria®
Neuroendocrine Imaging. J Am Coll Radiol. 2019;16(5S):S161-S173.
doi:10.1016/j.jacr.2019.02.017
2. [ACR Practice Parameter for Performing and Interpreting Magnetic Resonance Imaging \(MRI\)](#)
3. Freda PU, Beckers AM, Katznelson L, et al. Pituitary Incidentaloma: An Endocrine Society Clinical Practice Guideline. *The Journal of Clinical Endocrinology & Metabolism*. 2011;96(4):894-904.
doi:10.1210/jc.2010-1048