

Spine MRI and Spine CT Test Request Tip Sheet

With/Without Contrast CT, MRI

Order the study that's considered best for a specific clinical scenario. Order a second study ONLY if the first study doesn't provide adequate information.

- MRI is almost always preferred over a CT scan. If ordering a CT, clearly document why an MRI isn't appropriate.

In cases of back pain without red flags, six weeks of multi-modality supervised conservative therapy (without significant symptom improvement) must be completed before an imaging study will be approved.

- Clear documentation of all elements of conservative therapy is required, including details and dates of the physical therapy, home exercise program, or chiropractic care.
- Reproducible neurological deficits must be documented in the clinical notes following a thorough neurological physical exam.
- We follow Choosing Wisely recommendations for low-back pain as shown below.

Radiation Exposure

Spine MRI: 0 mSv

Spine CT: 6.5 mSv

**Limit radiation exposure
whenever possible.**

**With and without contrast
doubles the radiation dose.**

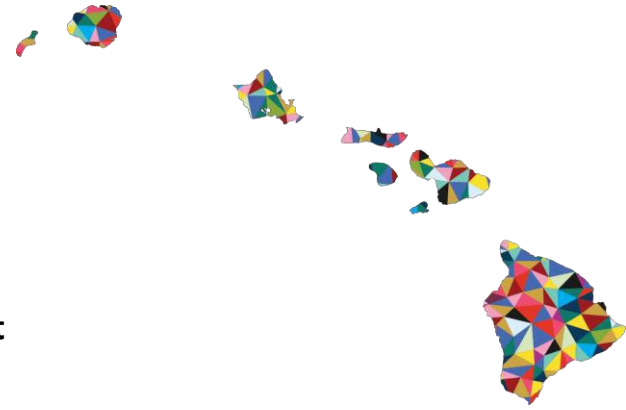


Choosing Wisely Recommendations

As part of Choosing Wisely, each participating specialty society has created lists of "Things Physicians and Patients Should Question." The lists provide specific evidence-based recommendations that physicians and patients should discuss when deciding the most appropriate care for their situation. The following recommendations are for spine CT and MRI.

- **Don't order imaging for low-back pain within the first six weeks unless red flags are present.** (American Academy of Family Physicians)
- **Don't obtain imaging studies for patients with non-specific low-back pain.** (American College of Physicians)
- **Avoid imaging studies (MRI, CT, or X-rays) for acute low-back pain without specific indications.** (American Society of Anesthesiologists - Pain Medicine)
- **In the absence of red flags, don't recommend advanced imaging (e.g., MRI) of the spine within the first six weeks for patients with non-specific acute low-back pain.** (North American Spine Society)

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Brain MRI and CT Test Request Tip Sheet

- MRI is almost always preferred over a CT scan. If ordering a CT, clearly document why an MRI isn't appropriate.
- Chronic headache (including chronic migraine) is an indication for advanced imaging only if the headaches are increasing in frequency or have changed in severity or if new neurological deficits are present.
- We follow Choosing Wisely recommendations for headache and syncope (loss of consciousness) as shown below.

Radiation Exposure

Brain MRI: 0 mSv

Brain CT: 4 mSv

Limit radiation exposure whenever possible.

With and without contrast doubles the radiation dose.



Choosing Wisely Recommendations

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- **Don't perform neuroimaging studies in patients with stable headaches that meet criteria for migraine.** (American Headache Society)
- **Don't perform CT for headache when MRI is available, except in emergency settings.** (American Headache Society)
- **When evaluating simple syncope and during a normal neurological examination, don't obtain brain imaging studies.** (American College of Physicians)
- **Don't order imaging for uncomplicated headache.** (American College of Radiology)
- **Don't order a CT of the head/brain for sudden hearing loss.** (American Academy of Otolaryngology — Head and Neck Surgery Foundation)

Pediatric Consideration



- **Neuroimaging isn't necessary for a child with simple febrile seizure.** (American Academy of Pediatrics)

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Abdomen CT and Abdomen/pelvis CT Test Request Tip Sheet

- Abdomen and abdomen/pelvis CTs deliver a high radiation dose. Performing them with and without contrast delivers roughly double the dose.
- Alternative studies, such as ultrasound, are frequently indicated prior to CTs and must be documented in the clinical information accompanying the imaging request.
- Consider ultrasound as the first imaging study when evaluating abdominal complaints in children.
- Laboratory work that will help in the diagnosis of inflammatory conditions such as appendicitis should be completed and documented in the clinical record before requesting CT.
- We follow Choosing Wisely recommendations for functional abdominal pain and pediatric abdominal pain or suspected appendicitis.

Radiation Exposure

Abdomen CT: 8

Abdomen/pelvis CT:
14 mSv

*Limit radiation exposure
whenever possible.*

*With and without contrast
doubles the radiation dose.*



Choosing Wisely Recommendations

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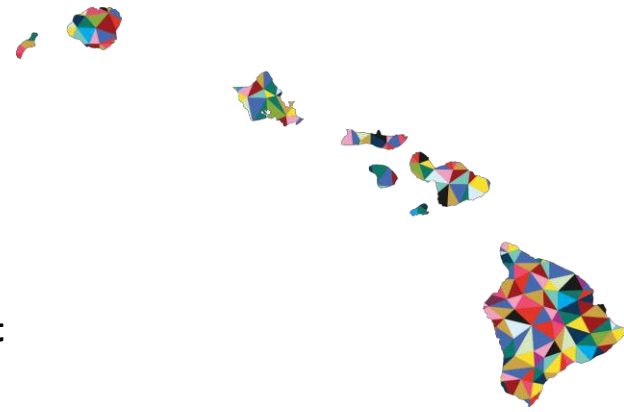
- **For a patient with functional abdominal pain syndrome (as per ROME III criteria), CT scans shouldn't be repeated unless there's a major change in clinical findings or symptoms.** (American Gastroenterological Society)

Pediatric Considerations



- **CTs aren't necessary in the routine evaluation of abdominal pain.** (American Academy of Pediatrics)
- **Don't order a CT for the evaluation of suspected appendicitis in children until after ultrasound has been considered.** (American College of Radiology and American College of Surgeons)

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Extremity MRI Test Request Tip Sheet

- An examination of the joint involved with documentation of findings consistent with the suspected diagnosis must be submitted as part of the clinical information when requesting an MRI.
- In most cases of persistent pain or suspected fracture, a plain X-ray should be documented and submitted with clinical information before ordering an MRI.
- Usually, four weeks of conservative therapy without significant pain relief should be documented and submitted with clinical information before ordering an MRI for chronic/persistent pain.
- We follow Choosing Wisely recommendations for MRI monitoring of rheumatoid disease.

Radiation Exposure

MRIs have no radiation exposure.

Choosing Wisely Recommendations

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- **Don't perform an MRI of the peripheral joints to routinely monitor inflammatory arthritis. Data evaluating MRI for the diagnosis and prognosis of RA are inadequate to justify widespread use of this technology for these purposes in clinical practice.** (American College of Rheumatology)

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Chest CT and CTA Test Request Tip Sheet

- A chest CTA (not a chest CT) is the most appropriate study to evaluate for pulmonary embolism.
- A chest CTA isn't usually indicated for evaluation of pulmonary embolism in a patient at low clinical risk for pulmonary embolism.
 - We suggest using the Wells or PESI criteria.
- We follow Choosing Wisely recommendations for radiographic evaluation of suspected pulmonary emboli.

Radiation Exposure

Chest CT: 7 mSv



Limit radiation exposure whenever possible.

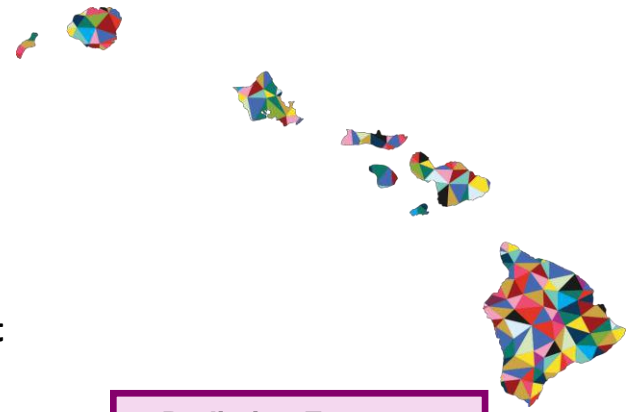
With and without contrast doubles the radiation dose.

Choosing Wisely Recommendations

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- **Don't perform chest CTA to evaluate for possible pulmonary embolism in patients with a low clinical probability and negative results of a highly sensitive D-dimer assay.** (American College of Chest Physicians and American Thoracic Society)
- **Don't perform a CT to evaluate indeterminate pulmonary nodules at more frequent intervals or for a longer period of time than recommended by established guidelines.** (American College of Chest Physicians and American Thoracic Society)
- **Don't perform CT for lung cancer in patients at low risk for lung cancer.** (American College of Chest Physicians and American Thoracic Society)
- **Don't image for suspected pulmonary embolism (PE) without moderate or high pre-test probability of PE. Imaging, particularly CT pulmonary angiography, is a rapid, accurate, and widely available test, but has limited value in patients with certain serum and clinical criteria.** (American College of Radiology)
- **Avoid using CTA to diagnose PE in young women with a normal chest radiograph; consider a radionuclide lung study (V/Q study) instead.** (Society of Nuclear Medicine and Molecular Imaging)

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Sinus CT Test Request Tip Sheet

- The primary use of sinus CT is to help manage chronic sinusitis.
 - Therefore, sinus CT for sinusitis is appropriate only after completion of a trial of observation to rule out the most common cause, viral rhinosinusitis.
 - This must be followed by a trial of medical therapy (antihistamines and antibiotics) if there's no improvement in symptoms.
- Brain/sinus CT combination studies are rarely indicated since brain CT almost always provides adequate views of the sinuses.
- We follow Choosing Wisely recommendations for radiographic monitoring of rhinosinusitis, including plain films.

Radiation Exposure

Sinus CT: 4 mSv



Limit radiation exposure whenever possible.

With and without contrast doubles the radiation dose.

Choosing Wisely Recommendations

As part of Choosing Wisely, each participating specialty society has created lists of "Things Physicians and Patients Should Question." The lists provide specific, evidence-based recommendations that physicians and patients should discuss when deciding the most appropriate care for their situation. The following recommendations are for sinus CT.

- **Don't order sinus CT or indiscriminately prescribe antibiotics for uncomplicated acute rhinosinusitis.** (American Academy of Allergy, Asthma & Immunology)
- **Don't routinely obtain radiographic imaging for patients who meet diagnostic criteria for uncomplicated acute rhinosinusitis. Imaging of the paranasal sinuses, including plain film radiography, CT, and MRI is unnecessary in patients who meet the clinical diagnostic criteria for uncomplicated acute rhinosinusitis.** (American Academy of Otolaryngology — Head and Neck Surgery Foundation)

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