

# Evidence Discussion (ONC 31.2)

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## Liver metastases

For patients with known malignancy with new symptoms suggestive of metastatic liver involvement or increase in LFTs, eviCore guidelines support CT of the abdomen with contrast or with and without contrast as first line imaging. This helps differentiate vascular enhancement patterns, number of lesions, and associated abdominal findings. If the CT remains indeterminate, MRI with and without contrast is supported as MRI enables better characterization of the internal features of the lesion (Gore 2017, Maino 2023). For patient safety, MRI is also supported if limited resection is being considered.

PET/CT is less specific than conventional imaging for liver lesions, and is not first line to clarify indeterminate liver findings on CT (ACR 2024, Gore 2017). However, if LFTs or tumor markers continue to rise and CT and MRI are negative, PET/CT may be used as a problem-solving tool to look for occult metastatic disease (Gore 2017). In the interest of patient safety, if a curative-intent resection of a liver lesion is planned, PET/CT may be used to confirm the liver metastasis is solitary to prevent subjecting the patient to a futile resection.

Imaging is indicated to evaluate for hepatic artery chemotherapy infusion or transarterial chemoembolization (TACE). Either CT or or MRI with and without contrast may be used for this purpose, per provider preference based on individual tumor characteristics, per the logic note in paragraph 1. eviCore guidelines for imaging for radioembolization align with international working group TheraSphere Global Dosimetry Steering Committee (DSC) recommendations and relevant ACR appropriateness criteria (Salem 2023, ACR 2024). Vascular mapping prior to radioembolization with CTA abdomen (with 3d rendering if requested), as well as a single nuclear medicine liver planar study or SPECT/SPECT- CT study, based on provider preference and individual tumor characteristics (Salem 2023). Liver-lung shunt calculations can generally be calculated from pre-treatment scans and an addition lung perfusion scan is not generally supported (Salem 2023). The nuclear imaging used pre-treatment is supported once post-treatment, and cross sectional imaging with CT or MRI to evaluate response is supported 1 month post treatment (Salem 2023).

Monitoring of ablated liver tumors, metastatic or primary, is with cross sectional imaging with CT or MRI abdomen, with and without contrast, per provider preference based on patient and tumor characteristics. In alignment with the NCCN hepatocellular carcinoma surveillance recommendations, eviCore supports this imaging 1 month post ablation, every 3 months for 2 years, then every 6 months until year 5 (Benson 2024). PET is not routinely supported for follow up for ablated liver lesions, regardless of ablation modality (Benson 2024, Barabasch 2015, ASCO 2024). The sensitivity of PET is only 65% in this setting, compared with 96% for MRI, and the positive and negative predictive values are also significantly superior for MRI vs PET (Barabasch 2015).

## References

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