

HCC & LI-RADS

LI-RADS (Liver Imaging Reporting and Data System)

Category	Criteria	Examples	
1 – Definitely Benign	<ul style="list-style-type: none"> Imaging features <i>diagnostic</i> of a benign entity Definite disappearance in absence of treatment 	<ul style="list-style-type: none"> Cyst Hemangioma Focal Fat deposition Hypertrophic pseudomass interpreted as definitely benign 	<ul style="list-style-type: none"> Wedge-shaped perfusional alterations Confluent fibrosis Focal scars Some arterial-phase non-hyperenhancing atypical nodules (homogeneous siderotic nodules)
2 – Probably benign	<ul style="list-style-type: none"> Imaging features <i>suggestive</i> of a benign entity Stable imaging features (and no increase in diameter) ≥ 2 years AND does not meet criteria LI-RADS 1, 4, or 5 Probable disappearance in the absence of treatment 	<ul style="list-style-type: none"> Atypical cyst, hemangioma, focal fat deposition, focal fatty sparing Hypertrophic pseudomass interpreted as probably benign Rounded or patchy perfusion alterations Atypical confluent fibrosis or focal scars Progressively enhancing observations 	<ul style="list-style-type: none"> Some arterial non-hyperenhancing atypical nodules <ul style="list-style-type: none"> Small (<2cm) heterogeneous siderotic nodules Small (<2cm) T1 hyperintense nodules Small (<2cm) steatotic nodules Large (≥ 2cm) otherwise unremarkable nodules
Category	Criteria		
3 – Intermediate Probably for HCC	<ul style="list-style-type: none"> Does not meet unequivocal LI-RADS 1, 2, 4 or 5 Meets criteria for LI-RADS 4 or 5 with stable imaging features and no increase in diameter for ≥ 2 years 	<20mm <ul style="list-style-type: none"> Masslike, arterial-phase hyperenhancement (HE), 0-1 major features Non-masslike 	≥ 20 mm <ul style="list-style-type: none"> Masslike, arterial-phase HE, no major features Non-masslike
4 – Probably HCC	< 20mm <ul style="list-style-type: none"> Masslike, arterial-phase HE, with 1 additional major feature Masslike, arterial-phase isoenhancement or hypoenhancement, with 2 additional major features Probable tumor within lumen of vein 	≥ 20 mm <ul style="list-style-type: none"> Masslike, arterial-phase HE, with no additional major feature Masslike, arterial-phase isoenhancement or hypoenhancement, with 1-2 additional major features Probable tumor within lumen of vein 	
5 – Definitely HCC	≥ 10 & <20 mm <ul style="list-style-type: none"> Masslike, arterial-phase HE, with 2 additional major feature Definite tumor within lumen of vein 	≥ 20 mm <ul style="list-style-type: none"> Masslike, arterial-phase HE, with 1-2 additional major feature Definite tumor within lumen of vein 	Additional Major Features <ul style="list-style-type: none"> Portal venous or later phase HYPOenhancement relative to liver Increase in diameter by ≥ 10mm within one year

http://www.acr.org/SecondaryMainMenuCategories/quality_safety/LI-RADS.aspx

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does not apply to previously treated lesions

OPTN sub-classification system for LI-RADS 5 lesions

OPTN Classification System for Nodules Seen on Imaging of Cirrhotic Livers

Class	Description	Eligible for exception points
o	Incomplete or technically inadequate study	Repeat study required for adequate assessment; automatic priority MELD points cannot be assigned base on an OPTN o classified imaging study.
5	Meets radiologic criteria for HCC	May qualify for automatic exception depending on stage.
5A	<ul style="list-style-type: none"> ≥ 1cm and <2cm measure on late arterial or portal phase images 	<ul style="list-style-type: none"> Single nodule AND Increased contrast enhancement (CE) on later arterial phase (relative to hepatic parenchyma) AND Washout during the later contrast phase AND peripheral rim enhancement (capsule/pseudocapsule) on delayed phase
5A-g	Same size as 5A	<ul style="list-style-type: none"> Single nodule AND Increased CE on late arterial phases AND Growth (maximum diameter increase) by 50% or more documented on serial MRI or CT obtained < 6m apart.
5B	Maximum diameter ≥ 2cm, ≤ 5cm	<ul style="list-style-type: none"> Single nodule AND Increased CE on late arterial phase AND One of the following: <ul style="list-style-type: none"> Washout on PV/delayed phase Late capsule/pseudocapsule enhancement Growth (max diameter increased in absence of of ablative therapy) by 50% or more documented on serial MR or CT obtained <6m apart Biopsy
5T	Prior local regional treatment for HCC	<ul style="list-style-type: none"> Past loco-regional treatment for HCC (OPTN Class 5 or biopsy proven prior to ablation) Evidence of persistent/recurrent HCC such as nodular or crescentic extra-zonal or intra-zonal enhancing tissue on late arterial imaging
5X	Maximum diameter ≥ 5cm	<ul style="list-style-type: none"> Meets criteria for HCC (increased CE on late arterial phase AND washout on later phase OR peripheral rim enhancement) But are outside stage T2 (Tumor >5cm)

- Example:
 - Two 1.5 cm (5A) lesions

- 5B nodule qualifies for automatic MELD priority score
- Examples:
 - One 1.5cm lesion (5A) and one 2.5 cm lesion (5B)
 - One 3.5cm lesion (5B)
 - Two 2.1cm lesions (5B)

- Eligible for continued priority points predicated on pre-treatment classification of the nodule.

- Not eligible for automatic exception points
- These cases may be considered by the Regional Review Board (RRB)

UNOS Automatic Exception

Only patients within Milan Criteria (Stage T2) are eligible for an automatic HCC exception.

Stage T2:

- 1 lesions ≥2cm and ≤5cm OR
- 2-3 lesions, all ≥1cm and ≤3cm in size

* Lesions <1cm are indeterminate and will not count towards overall staging of HCC for automatic priority.

