

Appendix 1. Liver Reporting And Data System (LI-RADS)

The LI-RADS score ranges from LR-1 (favour benign lesions) to LR-5 (favour malignancy).

LR-1 (100% benign)

- imaging features diagnostic of a benign entity:
 - cyst
 - haemangioma
 - vascular anomaly
 - perfusion alteration
 - hypertrophic pseudomass
 - confluent hepatic fibrosis
 - focal scar

LR-2 (probably benign)

- entities are similar to LR1, but the appearance is highly suggestive of the entity instead of 100% diagnostically certain
 - atypical appearance of benign entities may be categorised as LR2
 - LR2 cirrhosis-associated nodule is also included

LR-3 (intermediate probability for HCC)

- not a definitely benign entity, but not definitely HCC
- includes entities with the following features:
 - not a definite mass
 - mass with hepatic arterial phase iso- or hypoenhancement
 - <20 mm with *no more than one* of the following:
 - nonperipheral "washout"
 - capsule
 - threshold growth
 - mass with hepatic arterial phase hyperenhancement
 - <20 mm with no "washout," capsule, or threshold growth

LR-4 (probably HCC)

- no arterial phase hyperenhancement
 - <20 mm
 - *two or more* of the following
 - non-peripheral "washout"
 - enhancing capsule
 - threshold growth

- ≥ 20 mm
 - *one or more* of the following
 - non-peripheral "washout"
 - enhancing capsule
 - threshold growth
- non-rim arterial phase hyperenhancement
 - < 10 mm
 - *one or more* of the following
 - non-peripheral "washout"
 - enhancing capsule
 - threshold growth
 - 10-19 mm
 - enhancing "capsule", but does not meet threshold growth or washout criteria
 - ≥ 20 mm
 - *no* major suspicious features:
 - non-peripheral "washout"
 - enhancing capsule
 - threshold growth

LR-5 (100% definite HCC)

- non-rim arterial phase hyperenhancement
 - 10-19 mm
 - *single* major suspicious feature (washout or threshold growth), excluding enhancing "capsule" (LR-4)
 - *two or more* of the following
 - threshold growth
 - enhancing capsule
 - nonperipheral "washout"
 - ≥ 20 mm
 - *one or more* of the following
 - threshold growth
 - enhancing capsule
 - nonperipheral "washout"

Special categories

LR-M for liver lesions that are probably or definitely malignant, but not an appearance compatible with HCC. Examples of this include:

- targetoid mass
- non-targetoid mass with
 - infiltrative appearance
 - marked diffusion restriction
 - necrosis or severe ischaemia
 - other appearance that in the radiologists' judgement suggests a non-HCC malignancy

LR-NC (LR-non-categorisable) for lesions in which the technical quality of imaging does not allow evaluation of the major features.

LR-TIV for unequivocal enhancing soft tissue invading the portal vein, regardless of whether an underlying parenchymal mass is visible.

Potential management of liver nodules on basis of LIRADS classification:

LR1: discharge from cancer pathway

LR2: likely benign observation, consider repeat diagnostic imaging in six months or less

LR3: repeat or alternative diagnostic imaging in 3-6 months depending on clinical context, biopsy in selected cases

LR4: likely HCC- multidisciplinary team discussion for tailored workup, may include biopsy

LR5: diagnosis of HCC confirmed - plan treatment

LR-NC: repeat or alternative diagnostic imaging in three months or less