Chapter 1

What is LI-RADS®?

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What is LI-RADS®?

The Liver Imaging Reporting And Data System (LI-RADS) is:

- A comprehensive system:
  - It standardizes terminology, technique, interpretation, reporting, and data collection of liver imaging in patients at risk for or with HCC
  - It addresses the entire spectrum of lesions and pseudolesions in such patients

- A dynamic system:
  - It will expanded and refined as knowledge accrues and in response to user feedback

LI-RADS is designed to enhance communication and to improve quality and safety.

LI-RADS is developed by a multidisciplinary, international consortium of diagnostic and interventional radiologists, hepatobiliary surgeons, hepatologists, and hepatopathologists. Contributors include academic and community physicians as well as members in training.

LI-RADS may be used for:
- Clinical care
- Education
- Research

LI-RADS may be used by:
- Community and academic radiologists
- Radiologists in training
- Other health care professionals providing care to patients with liver disease
- Educators
- Researchers

LI-RADS is supported and endorsed by the American College of Radiology (ACR)

LI-RADS is consistent with and fully integrated into AASLD clinical practice guidance

LI-RADS is consistent with NCCN guidelines

LI-RADS can be utilized by liver transplant centers in the United States. The conversion from LI-RADS categories to OPTN classes is straightforward. See Chapter 11, page 10.
LI-RADS® Mission, Vision, and Goals

LI-RADS mission

To standardize the terminology, technique, interpretation, reporting, and data collection of liver imaging for clinical care, education, and research in patients at high risk for or with HCC.

LI-RADS vision

To improve the outcomes of patients with liver disease through a unified, comprehensive system for liver imaging. The initial focus of LI-RADS is on patients at high risk for or with HCC.

LI-RADS goals

- Develop and promote consistent terminology in clinical care, education, and research
- Increase the knowledge of radiologists and other specialists about imaging diseases of the liver
- Improve radiologist’s diagnostic skills
- Reduce imaging interpretation variability and errors
- Promote clear communication with referring clinicians
- Enhance understanding by patients
- Facilitate quality improvement and research
- Contribute to optimal patient management

LI-RADS development

LI-RADS was developed and iteratively refined by a blend of evidence, expert opinion, a desire for congruency with other systems, and user feedback.
LI-RADS® History

LI-RADS was developed and refined over years by a growing consortium of contributors:

- **2006**: Embryonic versions of LI-RADS created at Thomas Jefferson and UC San Diego, modeled after BI-RADS®
- **2008**: ACR LI-RADS committee launched
- **2011**: v1.0 criteria & lexicon for CT, MRI-ECA
- **2013**: v2013: add algorithm & atlas for CT, MRI-ECA
- **2014**: v2014: add MRI-HBA, simplify algorithm
- **2017**: v2017: add US, CEUS, treatment response; further simplify algorithm
- **2018**: v2018: modify LR-5 criteria for concordance with AASLD; simplify threshold growth definition for concordance with AASLD and OPTN; create manual

4 contributors from 2 institutions in USA

> 250 contributors from > 100 institutions from > 30 countries
LI-RADS® International Consortium

The LI-RADS international consortium currently includes > 250 members from > 100 institutions from > 30 countries

Updated November 2018

Want to join or contribute?

Please email RADS@acr.org
LI-RADS® Organization

LI-RADS is led by a Steering Committee which is supported by the ACR and oversees a writing group and various working groups.

Steering Committee
Sirlin
Chernyak

Supports

Oversees activities of working groups and writing group
Approves new content
Guides overall direction

Writing Group
Sirlin & Chernyak

Consults with

Harmonizes with

AASLD
NCCN
OPTN
RADLEX

What is LI-RADS?

Working Groups
Focused activities and deliverables

Benign Lesions
Ronot

Hepatobiliary
Agents
Heiken & Fowler

Pediatrics
Towbin

Treatment Response
Do

CEUS
Kono

International
Tang

Rad Path
Furlan

Tech & Apps
Kohli

Evidence
McInnes

Management
Hecht & Fowler

Reporting
TBD

Ultrasound
Kamaya

Research & Development
Bashir

Outreach & Education
Kielar & Elsayes

Technique
Kambadakone

Harmonizes with

Society of Abdominal Radiology
HCC Disease Focus Panel

Harmonizes with

Collaborates with
LI-RADS® Algorithms

Surveillance ultrasound for HCC in high-risk patient

- **Surveillance US LI-RADS® Algorithm**
  - If observation detected incidentally, but not fully characterized
    - If US-3
      - **CEUS Diagnostic LI-RADS® Algorithm**
  - If observation detected, proceed to diagnostic algorithm
    - **Diagnostic imaging for HCC with multiphase CT, MRI, or CEUS**
      - If CEUS
        - **CEUS Diagnostic LI-RADS® Algorithm**
      - If CT or MRI with ECA or MRI with HBA
        - **CT/MRI Diagnostic LI-RADS® Algorithm**

Non-multiphase CT or MRI in high-risk patient

Multiphase CT or MRI in high-risk patient

- **Non-multiphase CT or MRI LI-RADS® Algorithm**
- **Multiphase CT or MRI LI-RADS® Algorithm**

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**Footnotes**

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<td>b.</td>
<td>Multiphase CT or MRI in high-risk patient</td>
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<td>c.</td>
<td>Non-multiphase CT or MRI in high-risk patient</td>
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<td>d.</td>
<td>Treatment response assessment with CT/MRI</td>
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