

# Interpretation of Diagnostic Tests for Hepatitis B

Test	Acute Hepatitis B	Past Exposures (Immunity)	Previous Immunization
HBsAg	+	—	—
anti-HBs	—	+ +	—
HBeAg	+	—	—
anti-HBe	—	+ / —	—
anti-HBc	+ +	—	—
IgM anti-HBc	+	—	—
HBV DNA*	+	—	—
ALT	Elevated	Normal	Normal

\*By conventional assay. A lower level of viremia may be detected by other more sensitive tests such as PCR.  
 Shetty K and Younossi ZM. *Practical Gastroenterology*. 1998;22:39-47.

# Interpretation of Diagnostic Tests for Hepatitis B (cont.)

Test	Chronic Hepatitis B	Chronic Precore	Healthy Carrier
HBsAg	+	+	+
anti-HBs	—	—	—
HBeAg	+	—	—
anti-HBe	—	+	+
anti-HBc	+	+	+
IgM anti-HBc	—	—	—
HBV DNA*	+/	+/	—
ALT	Elevated	Elevated	Normal

\*By conventional assay. A lower level of viremia may be detected by other more sensitive tests such as PCR.  
Shetty K and Younossi ZM. *Practical Gastroenterology*. 1998;22:39-47.

# Evaluation of Liver Disease in HBV Infection

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## Indicator

Alanine aminotransferase (ALT)  
Aspartate aminotransferase (AST)

Bilirubin  
Prothrombin time (PT)

Albumin

Liver histology  
Ultrasound

## Interpretation\*

↑ suggests hepatocyte damage  
↑ suggests hepatocyte damage†

↑ suggests hepatic dysfunction  
↑ suggests hepatic dysfunction

↓ suggests hepatic insufficiency

Indicator of disease stage & grade  
Identifies tumors/cirrhosis

\* Indicates typical use of indicators for evaluating liver disease.

†AST elevations are less liver-specific than ALT, and may indicate damage of other tissue types.

# Knodell Scoring System for Liver Biopsies

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Category	Components Evaluated	Range of Scores
Grade*	1. Periportal necrosis with or without bridging necrosis	0-10
	2. Intralobular degeneration and focal necrosis	0-4
	3. Portal inflammation	0-4
Stage†	4. Fibrosis	0-4

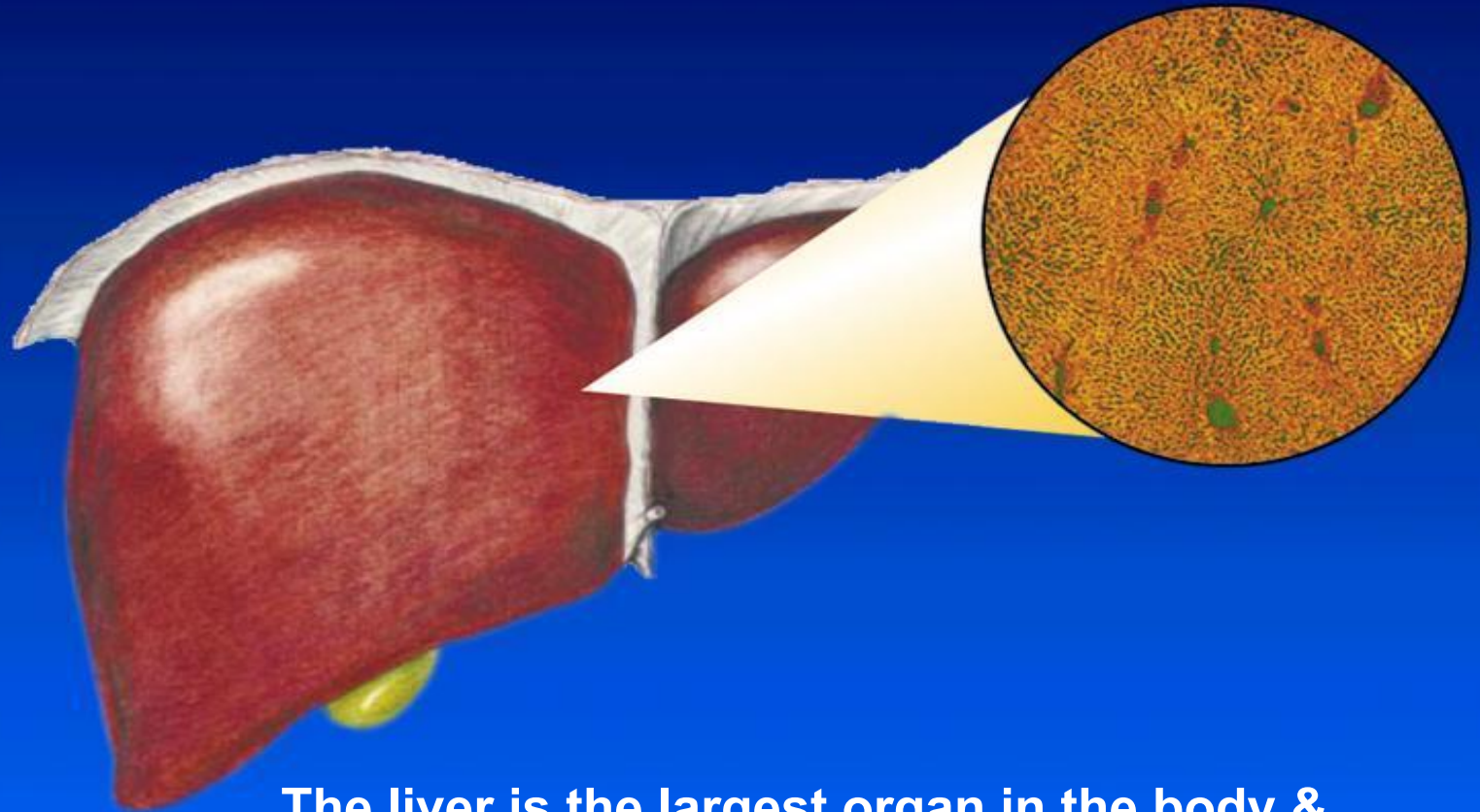
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\*The Grade score reflects severity of necrosis and inflammation.

†The Stage score indicates scarring, or potentially irreversible disease progression.

# Healthy Liver

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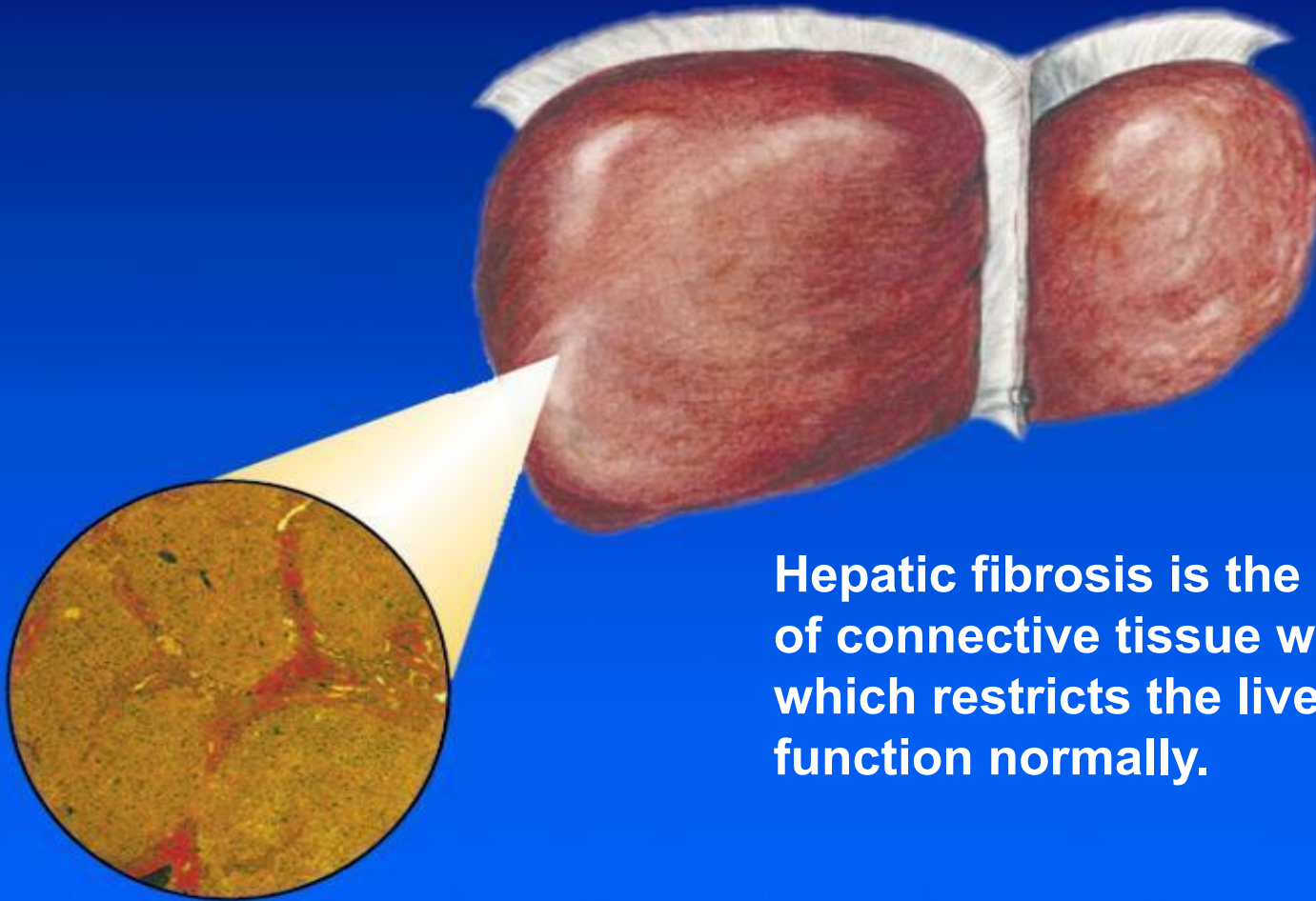


The liver is the largest organ in the body &

- stores vitamins A<sub>1</sub>, B<sub>12</sub>, D, E, & K
- metabolizes lipids
- manufactures cholesterol
- stores glycogen

# Fibrosis

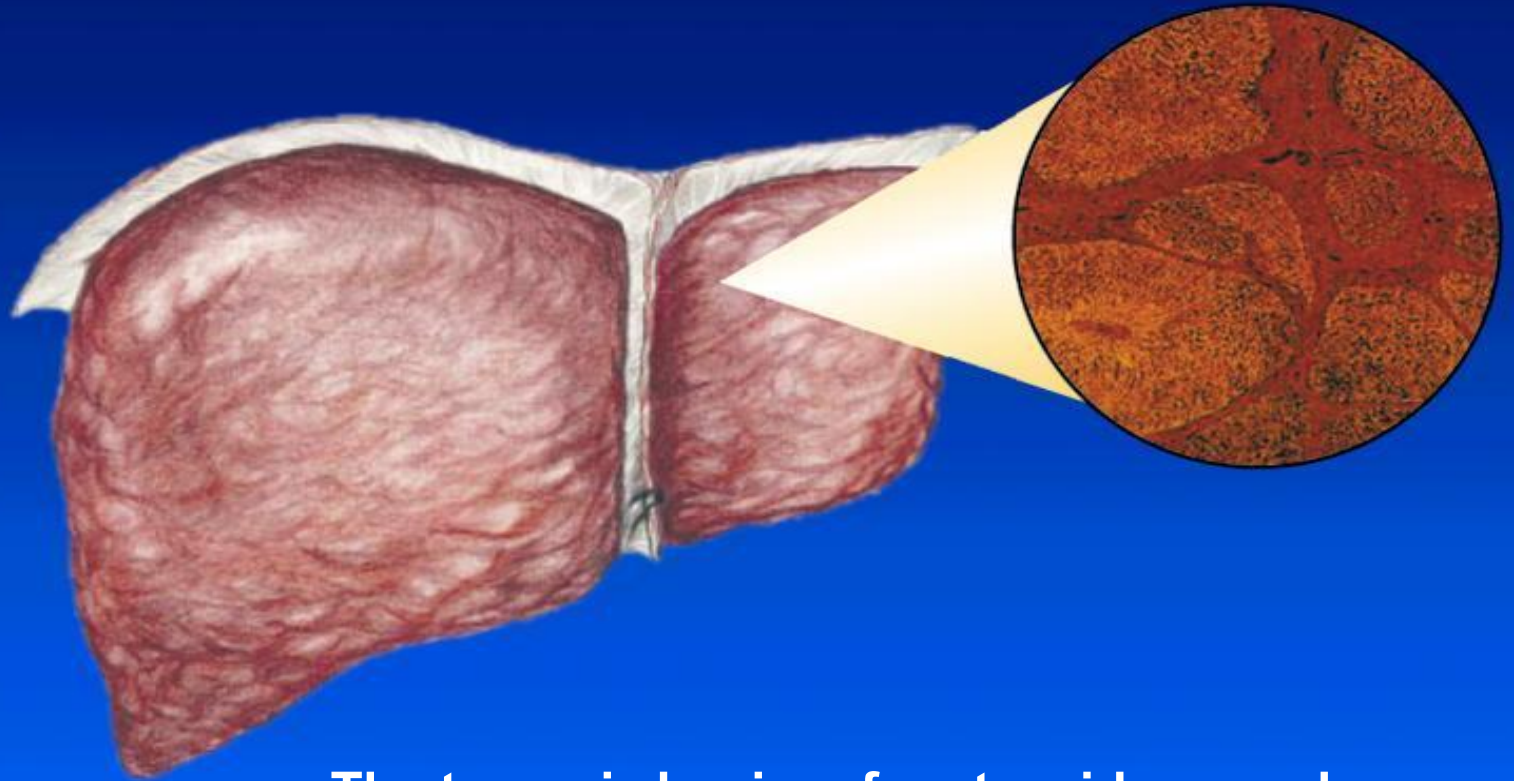
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**Hepatic fibrosis is the overgrowth of connective tissue within the liver, which restricts the liver's ability to function normally.**

# Cirrhosis

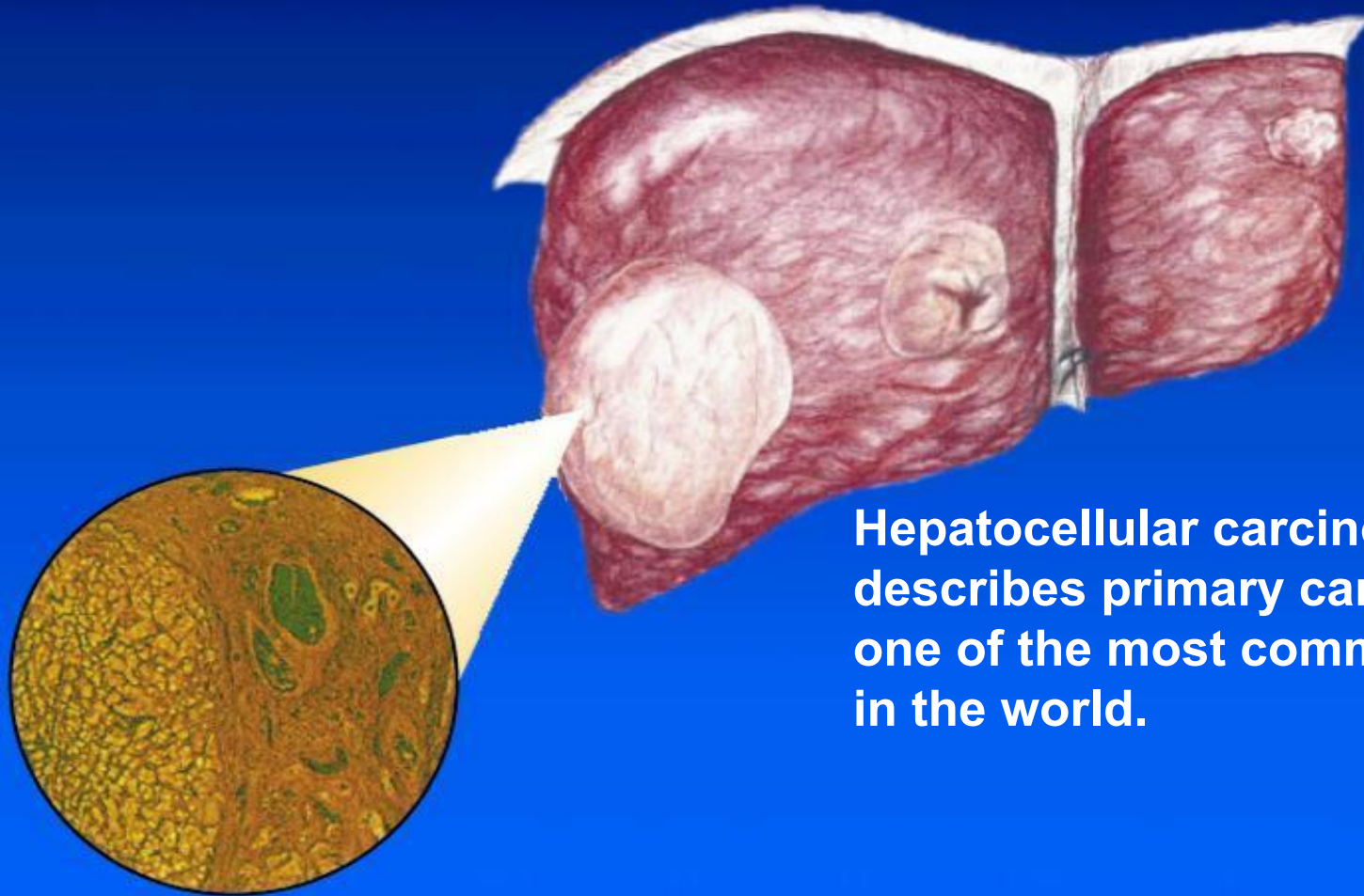
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The term cirrhosis refers to widespread fibrosis and nodule formation within the liver. Its presence implies previous or continuing hepatic damage.

# Hepatocellular Carcinoma

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Hepatocellular carcinoma (HCC) describes primary cancer of the liver, one of the most common carcinomas in the world.



# Chronic Hepatitis B: Summary

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- HBsAg+ for  $\geq 6$  months
- Variable clinical course
- Morbidity and mortality from chronic necroinflammatory disease in liver
- Disease progression is associated with persistently high HBV replication

# Management of Chronic Hepatitis B

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## Goals of patient management

- Suppression of viral replication
- Improvement in hepatic necroinflammatory disease
- Reduction in long-term sequelae of HBV-associated liver disease (cirrhosis, hepatocellular carcinoma)