

Interpretation of Diagnostic Tests for Hepatitis B

Acute Test	Past Hepatitis B (Immunity)	Exposures	Previous Immunization
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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
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HBsAg	+	+	+
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anti-HBs			—	—	—
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HBeAg	+			—	—
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anti-HBe		+	+	—	
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anti-HBc	+	+	+		
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IgM anti-HBc				—	—	—
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HBV DNA*		+/	+/	—	—	—
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ALT	Elevated	Elevated	Normal		
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*By conventional assay. A lower level of viremia may be detected by other more sensitive tests such as PCR.
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Evaluation of Liver Disease in HBV Infection

Indicator

Alanine aminotransferase (ALT)
Aspartate aminotransferase (AST)

Interpretation*

↑ suggests hepatocyte damage
↑ suggests hepatocyte damage†

Bilirubin
Prothrombin time (PT)

↑ suggests hepatic dysfunction
↑ suggests hepatic dysfunction

Albumin

↓ suggests hepatic insufficiency

Liver histology
Ultrasound

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.

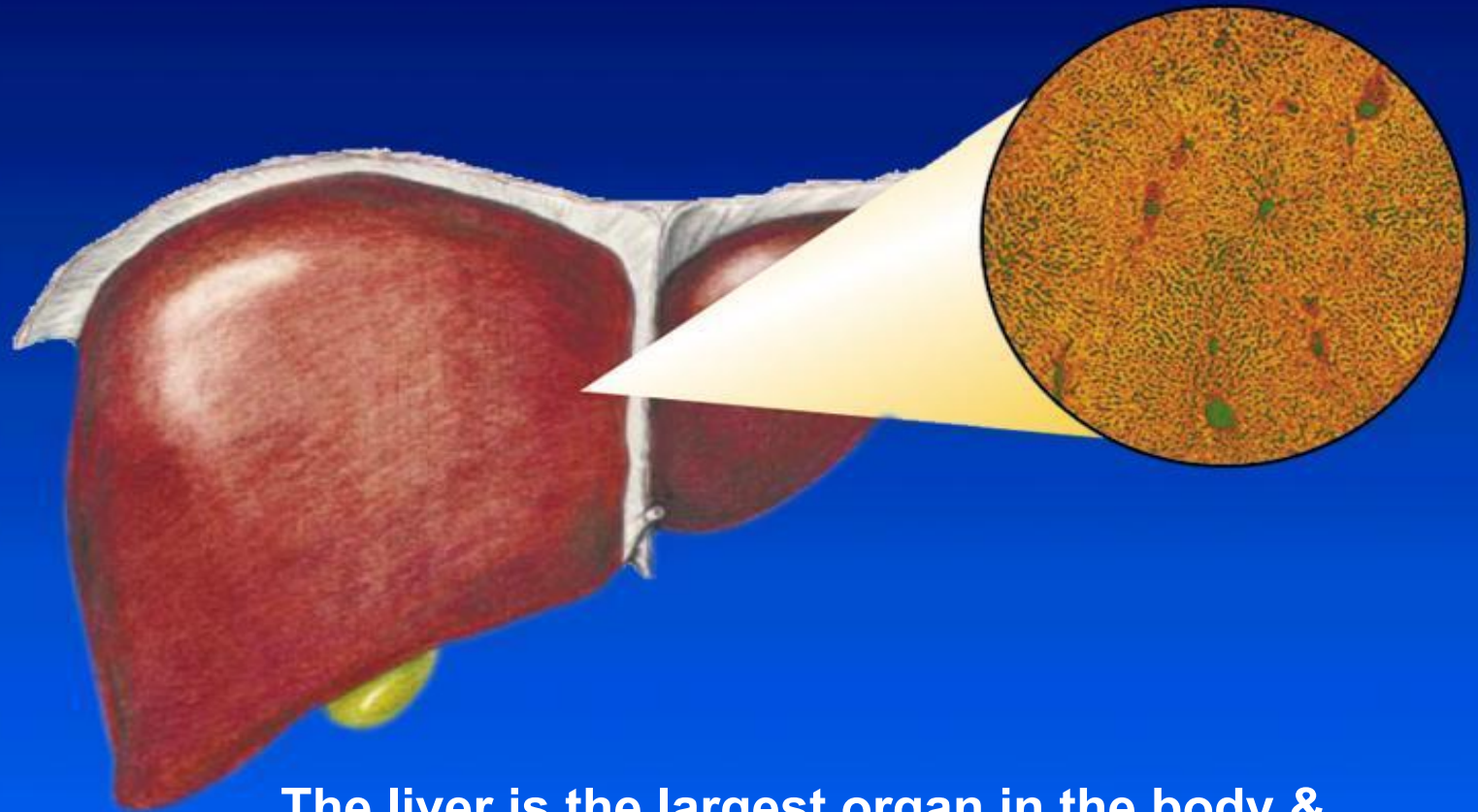
Knodell Scoring System for Liver Biopsies

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

*The Grade score reflects severity of necrosis and inflammation.

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

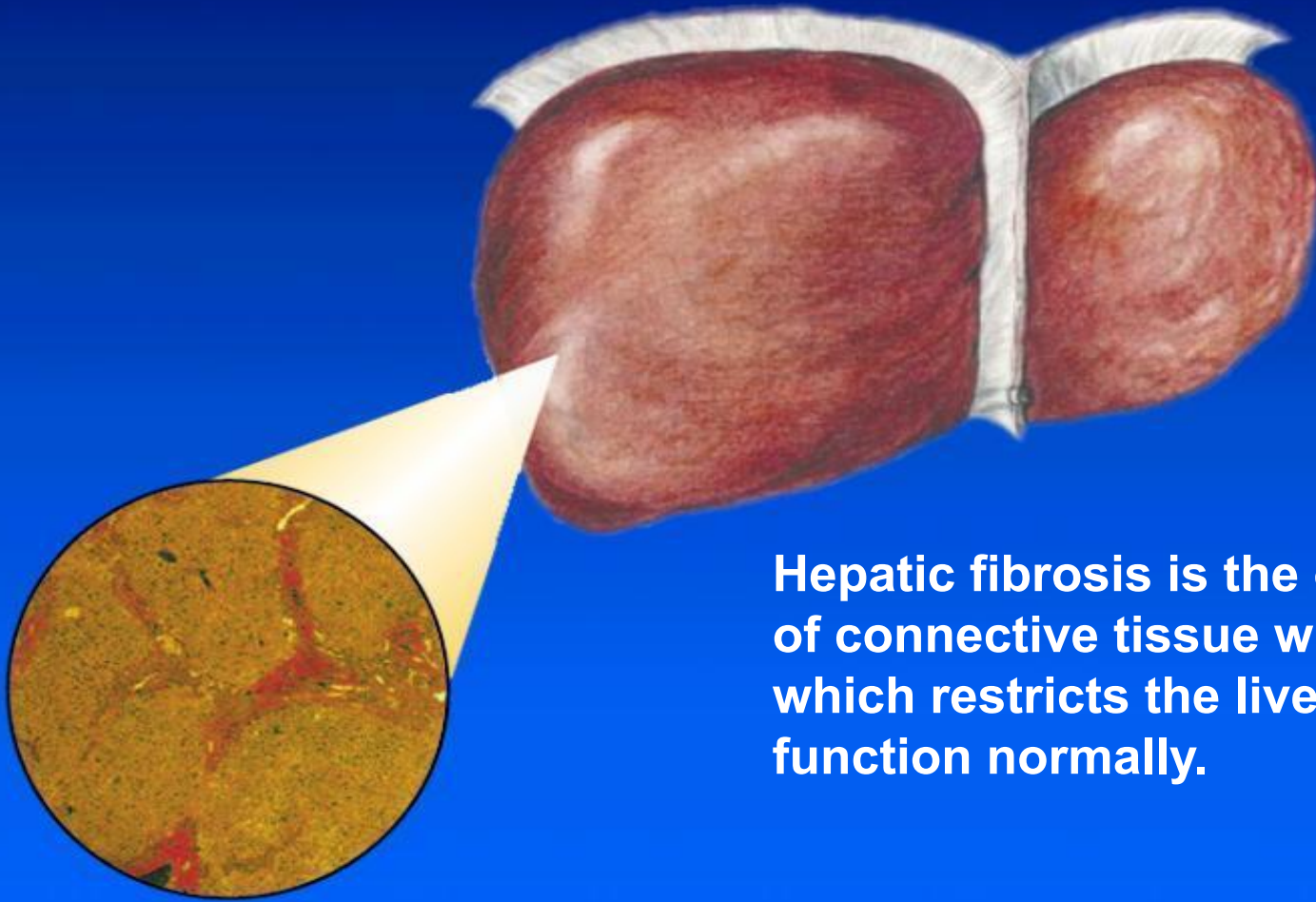
Healthy Liver



The liver is the largest organ in the body &

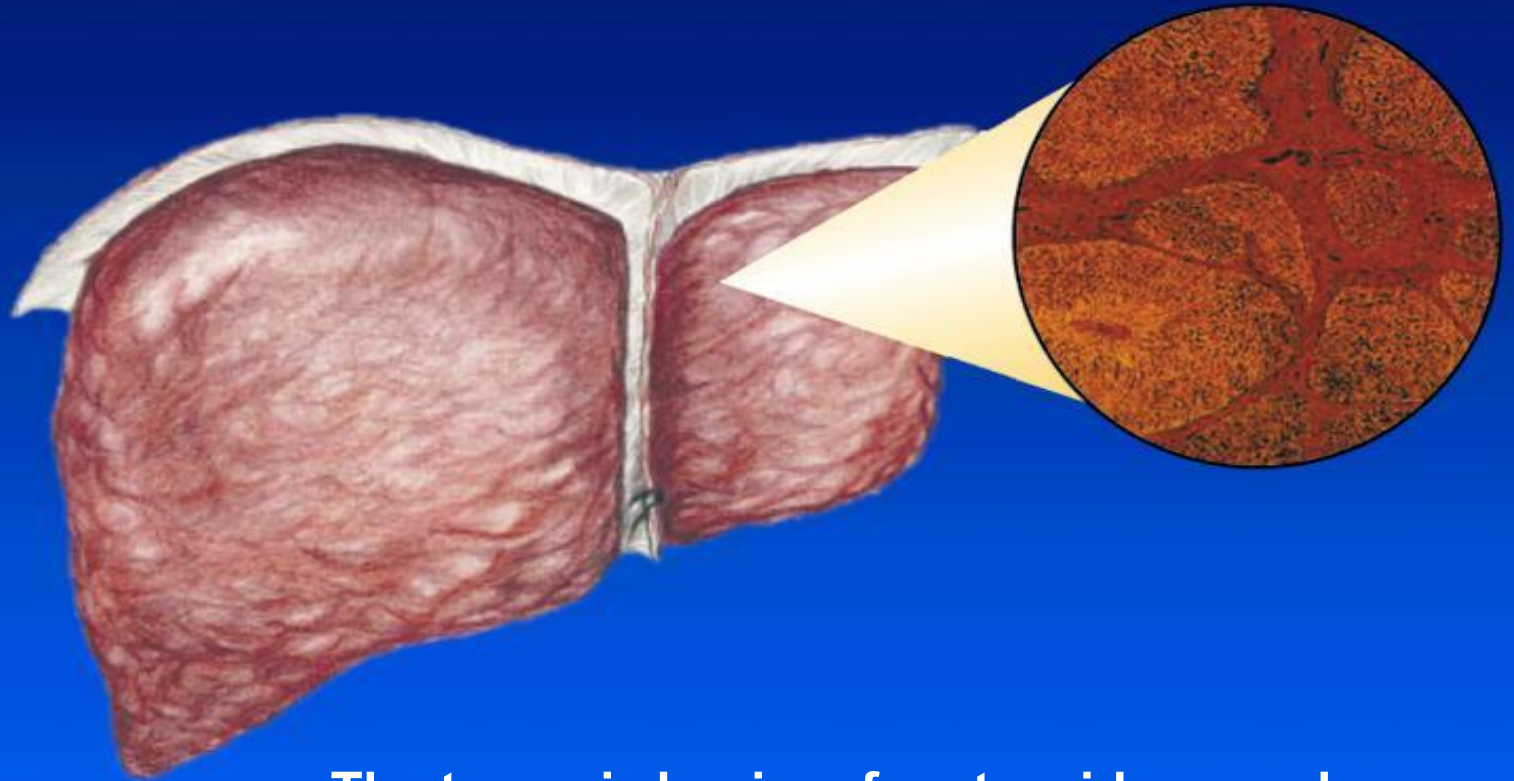
- stores vitamins A₁, B₁₂, D, E, & K
- metabolizes lipids
- manufactures cholesterol
- stores glycogen

Fibrosis



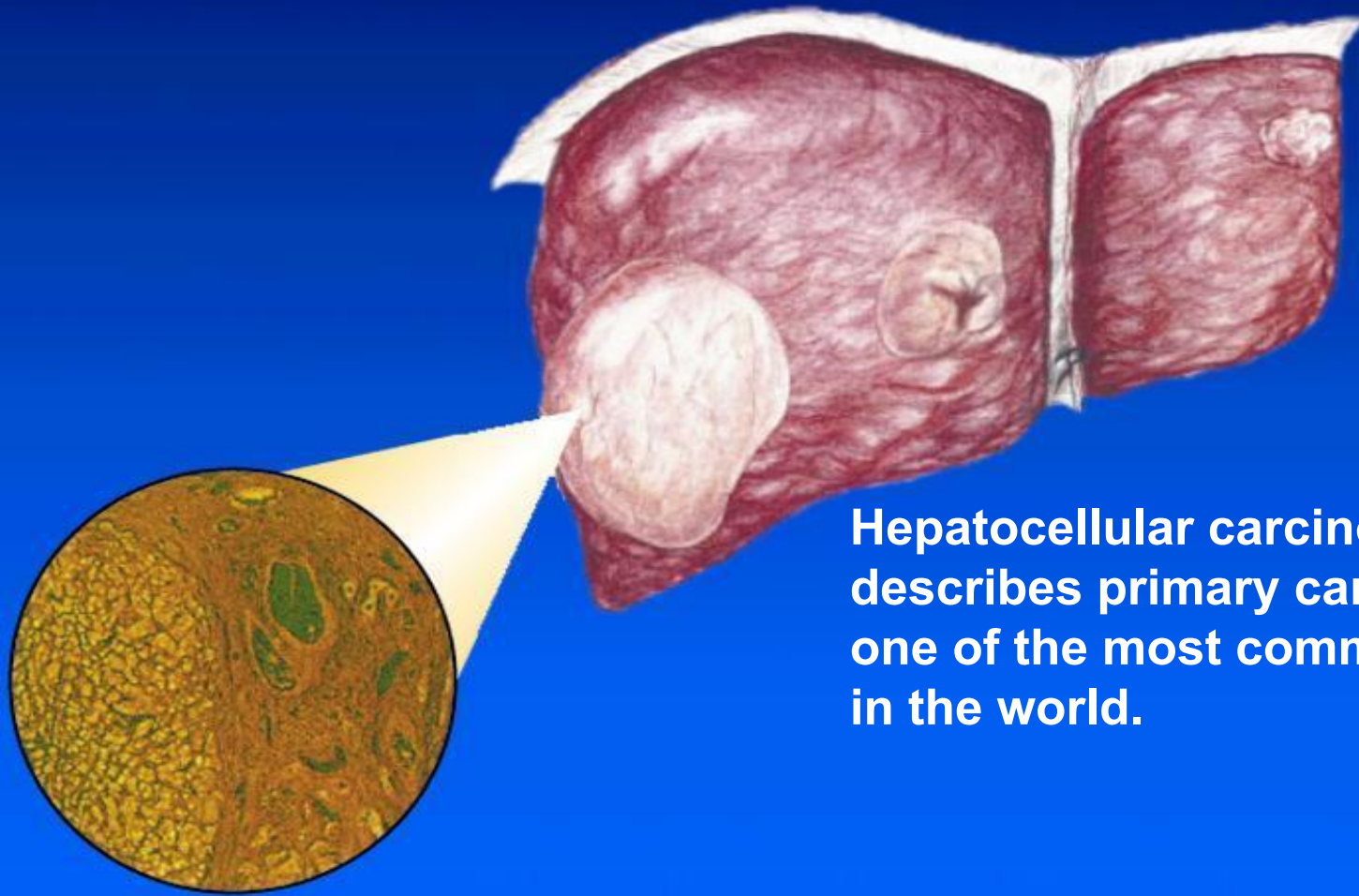
Hepatic fibrosis is the overgrowth of connective tissue within the liver, which restricts the liver's ability to function normally.

Cirrhosis



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

Hepatocellular Carcinoma



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

Chronic Hepatitis B: Summary

- HBsAg+ for ≥ 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

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)