

Organ injury scaling 2018 update: Spleen, liver, and kidney

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TABLE 2. Liver Injury Scale—2018 Revision

AAST Grade	AIS Severity	Imaging Criteria (CT Findings)	Operative Criteria	Pathologic Criteria
I	2	<ul style="list-style-type: none"> – Subcapsular hematoma <10% surface area – Parenchymal laceration <1 cm in depth 	<ul style="list-style-type: none"> – Subcapsular hematoma <10% surface area – Parenchymal laceration <1 cm in depth – Capsular tear 	<ul style="list-style-type: none"> – Subcapsular hematoma <10% surface area – Parenchymal laceration <1 cm – Capsular tear
II	2	<ul style="list-style-type: none"> – Subcapsular hematoma 10–50% surface area; intraparenchymal hematoma <10 cm in diameter – Laceration 1–3 cm in depth and ≤ 10 cm length 	<ul style="list-style-type: none"> – Subcapsular hematoma 10–50% surface area; intraparenchymal hematoma <10 cm in diameter – Laceration 1–3 cm in depth and ≤ 10 cm length 	<ul style="list-style-type: none"> – Subcapsular hematoma 10–50% surface area; intraparenchymal hematoma <10 cm in diameter – Laceration 1–3 cm depth and ≤ 10 cm length
III	3	<ul style="list-style-type: none"> – Subcapsular hematoma >50% surface area; ruptured subcapsular or parenchymal hematoma – Intraparenchymal hematoma >10 cm – Laceration >3 cm depth – Any injury in the presence of a liver vascular injury or active bleeding contained within liver parenchyma 	<ul style="list-style-type: none"> – Subcapsular hematoma >50% surface area or expanding; ruptured subcapsular or parenchymal hematoma – Intraparenchymal hematoma >10 cm – Laceration >3 cm in depth 	<ul style="list-style-type: none"> – Subcapsular hematoma >50%-surface area; ruptured subcapsular or intraparenchymal hematoma – Intraparenchymal hematoma >10 cm – Laceration >3 cm in depth
IV	4	<ul style="list-style-type: none"> – Parenchymal disruption involving 25–75% of a hepatic lobe – Active bleeding extending beyond the liver parenchyma into the peritoneum 	<ul style="list-style-type: none"> – Parenchymal disruption involving 25–75% of a hepatic lobe 	<ul style="list-style-type: none"> – Parenchymal disruption involving 25–75% of a hepatic lobe
V	5	<ul style="list-style-type: none"> – Parenchymal disruption >75% of hepatic lobe – Juxtahepatic venous injury to include retrohepatic vena cava and central major hepatic veins 	<ul style="list-style-type: none"> – Parenchymal disruption >75% of hepatic lobe – Juxtahepatic venous injury to include retrohepatic vena cava and central major hepatic veins 	<ul style="list-style-type: none"> – Parenchymal disruption >75% of hepatic lobe – Juxtahepatic venous injury to include retrohepatic vena cava and central major hepatic veins

Vascular injury is defined as a pseudoaneurysm or arteriovenous fistula and appears as a focal collection of vascular contrast that decreases in attenuation with delayed imaging. Active bleeding from a vascular injury presents as vascular contrast, focal or diffuse, that increases in size or attenuation in delayed phase. Vascular thrombosis can lead to organ infarction.

Grade based on highest grade assessment made on imaging, at operation or on pathologic specimen.

More than one grade of liver injury may be present and should be classified by the higher grade of injury.

Advance one grade for multiple injuries up to a grade III.