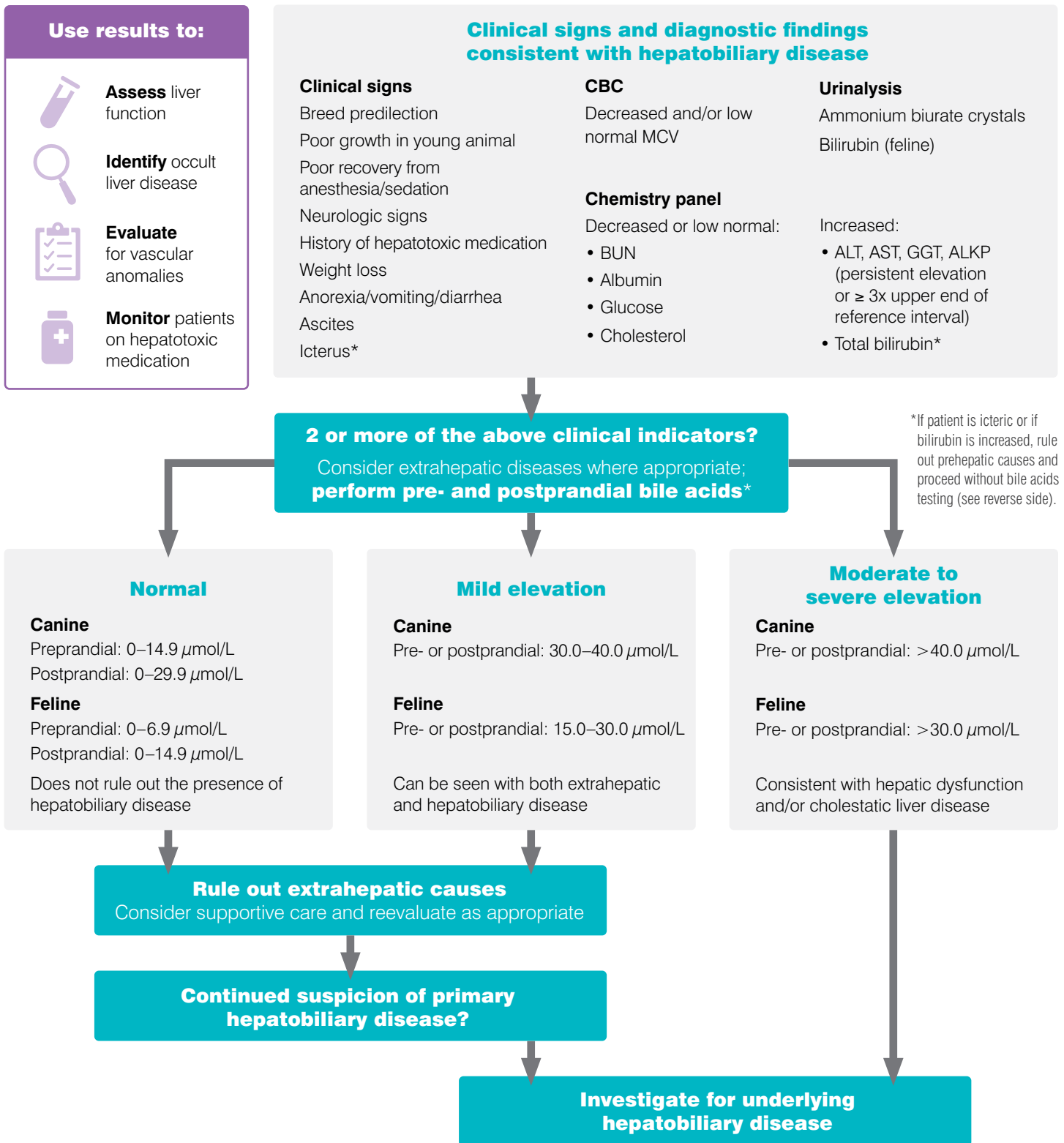


# Bile acids algorithm



See reverse side for steps to identify/rule out possible causes of increased bile acids



## Increased bile acids and/or hepatic enzymes?

### Evaluate for extrahepatic diseases



#### Possible causes

- Pancreatitis
- Gastrointestinal disease
- Endocrine
  - Hyperadrenocorticism
  - Hyperthyroidism
  - Diabetes mellitus
- Extrahepatic neoplasia
- Hypoperfusion (congestive heart failure, shock)
- Trauma
- Drug induced (ALKP/GGT)
  - steroids, phenobarbital
- Muscular disease (ALT/AST)
- Osteolytic disease/bone (ALKP)



#### Consider performing

- Spec cPL® Test/Spec fPL® Test
- Diagnostic imaging
- Endocrine testing

### Investigate underlying hepatobiliary disease



#### Possible causes

- Inflammation (chronic hepatitis, cholangiohepatitis)
- Infection (leptospirosis, bacterial cholangiohepatitis)
- Toxicity (NSAID, phenobarbital, sago palm)
- Vascular anomaly (portosystemic shunt, microvascular dysplasia)
- Neoplasia (primary or metastatic)
- Cholestatic liver disease
  - Lipidosis
  - Vacuolar hepatopathy
- Cirrhosis
- Biliary disease
  - Mucocele
  - Cholelith
  - Biliary neoplasia
  - Cholecystitis
- Breed-related increase (Maltese)



#### Consider performing

- Coagulation profile (PT/aPTT)
- Ammonia
- Diagnostic imaging
- Cytology
- Biopsy
  - Special testing as indicated (liver copper concentrations, liver culture)
- Infectious disease testing