

Estimates listed below are valid until 3/31/25

## Portosystemic Shunt Evaluation/Surgery Guidelines and Estimate

Pets suspected of having liver shunts should be placed on medical management for 4 weeks prior to their Soft Tissue surgery consult appointment at UTCVM. If the referring veterinarian or owner do not wish to start medical management prior to the initial appointment, the patient would need to be referred in through the Internal Medicine service to pursue further workup/management before being seen for surgical options. This may result in multiple visits or scheduling delays before surgical treatment is performed. Treatment recommendations include lactulose and a protein restricted diet (e.g., Hills L/D), plus antibiotics for dogs with urinary tract infections or severe hepatic encephalopathy. If an intrahepatic liver shunt is suspected (large breed dogs), the dog should be started on omeprazole, as well. All patients need to be up-to-date on core vaccines, including rabies vaccine (if age appropriate), before their appointments at UTCVM. Most dogs with portosystemic shunts (PSS) have decreased BUN, cholesterol, albumin, and MCV; bile acids > 100 micromoles; and improvement in clinical signs with medical management. If your patient does not fit this description, please call for a consultation before scheduling an appointment.

**PSS Workup Estimate:** \$1,500-\$3,640

### Extrahepatic PSS (usually small breed dogs)

The dog should be at least 12 weeks old and have received at least two of its DHLPP vaccines. If being referred for workup and surgery in the same visit, the dog should have been medically managed (liver diet and lactulose; other medications may be needed pending consultation) for 4 weeks before the appointment. The initial appointment will be made on the Soft Tissue Surgery Service on a Tuesday or Thursday. The client will meet with the surgery team at this time. The exam and any blood testing will be performed on the day of the appointment. The scintigraphy or portogram test is usually performed on the afternoon of the initial appointment. If the pet is determined to have an operable extrahepatic PSS, the surgery can usually be performed the following day, as long as the dog has been on appropriate medical management. Occasionally, other emergencies may delay diagnostics or surgery. The patient usually stays in our ICU for 48 hours after surgery, before being discharged. The total hospital stay for a typical patient with an extrahepatic shunt is 4-5 days. **The workup and surgery estimate is \$5,000-\$7,000 depending upon if a CT is needed as well.**

### Intrahepatic PSS (usually large breed dogs)

Shunting can be diagnosed on scintigraphy, but a CT is usually needed to determine whether an intrahepatic shunt can be corrected surgically or with coils. The exam, blood testing, and CT are typically performed at the initial visit, which may require a 2-day stay. Depending on results, surgery may need to be scheduled at a second visit so that appropriate surgical devices can be custom ordered and the appropriate specialist is available. The "gold standard" repair procedure for an intrahepatic shunt is percutaneous transvenous coil embolization ("coiling"), which is a minimally invasive technique; however, open surgery can be performed in some cases (e.g. left sided IHPSS). To undergo a coiling procedure, the patient needs to be at least 10 months of age. The coiling procedure is performed by Dr. Cassie Lux. For patients undergoing a coiling procedure, a second CT may be needed, depending on the age of the patient at the first CT or the quality of the CT, if it was performed at another facility. If the shunt can be corrected with open surgery, the repair can be performed by Dr. Karen Tobias; if Dr. Tobias is not on clinics at the time of the initial appointment, a second appointment may need to be scheduled. The hospital stay for a typical intrahepatic shunt is 4-5 days : 1-2 days for CT, 1 day of procedure, and 2 days for post-procedure monitoring. **The workup and surgery estimate is \$6,180-\$8,880 for open surgery and \$9,800-\$11,380 for the coiling procedure.**

If you have questions about initial medical management, the referring veterinarian may contact the Surgery, Internal Medicine, or Nutrition Service. If medical management is not working or the patient has ascites, however, please contact the Internal Medicine Service as this may be indicative of a nonsurgical condition. If the patient is on medical management and is experiencing uncontrollable seizures, the patient should be referred to our Neurology Service.

**Hospital Payment Policy:** [tiny.utk.edu/utcvmclientpayment](https://tiny.utk.edu/utcvmclientpayment)

**Client information about Portosystemic Shunts:** <https://tiny.utk.edu/DogLiverShunts>

**UTCVM Visit Information for Clients:** <https://tiny.utk.edu/UTCVMVisitInfo>

**THANK YOU FOR YOUR REFERRAL!**

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