

CASE REVIEW EXAMPLE

Milo - Increased drinking and moderate ALP elevation

PATIENT	SPECIES / BREED	AGE	PRIMARY CONCERN
Milo	Dog / Labrador Retriever	9 years	Increased drinking; elevated ALP

First question: Is Milo really drinking too much?

Normal water intake in dogs is usually around **40-60 mL/kg/day**, while persistent intake of approximately **90-100 mL/kg/day or more** is generally considered excessive. For a **30 kg Labrador**, that is roughly **1.2-1.8 L/day normally**, while around **2.7-3.0 L/day or more** clearly supports polydipsia. Measuring total intake over 2-3 days is a useful first step.

Clinical Summary

Milo is a 9-year-old Labrador Retriever with reported increased water intake and a moderate elevation in alkaline phosphatase (ALP). His remaining blood and urine results are reported to be largely normal. His veterinarian has recommended an abdominal ultrasound.

An ultrasound is a reasonable next step, but before proceeding it is important to confirm Milo's actual water consumption and review the complete blood and urine results. Increased drinking combined with an ALP elevation can occur with hepatobiliary disease, endocrine disease - particularly Cushing's disease - or several other conditions.

Differential Diagnoses for Increased ALP

- **Hyperadrenocorticism (Cushing's disease):** important in a middle-aged or older dog with increased drinking and increased ALP. Other possible signs include increased urination, increased appetite, panting, abdominal enlargement, muscle weakness, skin or coat changes, and recurrent infections.
- **Hepatobiliary disease:** cholestasis, chronic hepatopathy, inflammatory liver disease, or biliary obstruction.
- **Gallbladder disease:** biliary sludge, gallbladder mucocele, or inflammatory disease.
- **Diabetes mellitus:** increased thirst and urination are classic signs. Established diabetes would usually be associated with increased blood glucose and typically glucose in the urine.
- **Medication-related ALP induction:** particularly corticosteroids and some anticonvulsant medications.
- **Neoplasia:** hepatic, adrenal, or other abdominal tumors can sometimes be associated with increased ALP.
- **Age-related / nonspecific ALP elevation:** mild to moderate ALP increases can occur in older dogs without clinically important hepatobiliary disease, but age alone should not be assumed to explain a persistent elevation when clinical signs such as increased drinking are present.
- **Other endocrine/systemic disease:** metabolic disorders and less specific enzyme induction may also occur.

Confirm the Existing Laboratory Results First

Before proceeding directly to ultrasound or endocrine testing, Milo's complete laboratory results should be reviewed carefully. Important blood parameters include **glucose, ALT, AST, GGT, bilirubin, albumin, cholesterol, urea, creatinine, electrolytes, calcium, and the complete blood count.**

The urinalysis should be confirmed as normal, especially **urine specific gravity, glucose, ketones, protein, sediment, and evidence of urinary tract infection.** Urine specific gravity is particularly important in a dog suspected of polyuria/polydipsia.

If urinary protein is present, a **urine protein:creatinine ratio (UPC)** may be useful to quantify protein loss. For Cushing's screening, the relevant urine test is the **urine cortisol:creatinine ratio (UCCR).** A normal UCCR makes Cushing's disease less likely, while an increased result is not specific enough to confirm the diagnosis and generally requires further endocrine testing.

Abdominal Ultrasound

Once the existing laboratory and urine findings have been confirmed, an abdominal ultrasound is a reasonable next investigation. It can assess the **liver, gallbladder, bile ducts, adrenal glands, kidneys, spleen, pancreas, urinary bladder, and other abdominal structures.**

- Liver size and architecture
- Gallbladder and biliary system
- Adrenal gland size and symmetry
- Kidneys and urinary tract
- Presence of abdominal masses or other abnormalities

Changes such as hepatomegaly or adrenal enlargement may support suspicion of Cushing's disease. However, ultrasound alone **cannot reliably confirm or exclude Cushing's disease.** Minor liver or gallbladder abnormalities may also be incidental in an older dog and may not explain the increased drinking.

Should Milo Be Tested for Cushing's Disease?

If Milo's increased drinking is confirmed, his ALP remains elevated, and diabetes mellitus, renal disease, urinary disease, medication effects, and other obvious causes have been excluded, **Cushing's disease remains an important differential diagnosis.**

Specific endocrine testing may therefore be useful in addition to abdominal ultrasound. A commonly used diagnostic test is the **low-dose dexamethasone suppression test (LDDST).** An ACTH stimulation test may be appropriate in selected situations, while the UCCR is mainly useful as an initial screening test. Endocrine testing is most meaningful when there is reasonable clinical suspicion rather than because ALP is elevated in isolation.

Questions for Milo's Veterinarian

- How elevated is Milo's ALP compared with the laboratory reference range?
- Were blood glucose and urine glucose normal?
- What was Milo's urine specific gravity?
- Were kidney parameters, electrolytes, ALT, GGT, bilirubin, albumin, and cholesterol normal?
- Was any protein identified in the urine, and is a UPC indicated?
- Has urinary infection been excluded?
- Could any current or recent medication explain the ALP elevation?
- Does Milo have other signs compatible with Cushing's disease?
- Would a UCCR or low-dose dexamethasone suppression test be useful?
- What specific abnormalities are being investigated with ultrasound, and what would the next step be if it is normal?

Overall Assessment

The first step is to confirm whether Milo truly has excessive water intake and to verify that the complete blood and urine results are otherwise normal. If diabetes mellitus, kidney disease, urinary abnormalities, medication effects, and other obvious causes have been excluded, an abdominal ultrasound is a **reasonable next investigation.**

Given Milo's age, increased drinking, and elevated ALP, **Cushing's disease should remain an important differential diagnosis,** and targeted endocrine testing such as a low-dose dexamethasone suppression test may be appropriate. A staged approach - confirm true polydipsia, verify all laboratory and urine findings, then proceed with ultrasound and targeted endocrine testing where indicated - provides a logical diagnostic pathway.

Independent review note

This report is based solely on the information provided. It does not replace examination of Milo, review of the complete medical record, or diagnostic assessment by the treating veterinarian.