# How to Identify the Cause of Polydipsia / Polyuria in the Horse

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1) **Confirm Polydipsia** (*probable* if drinking >7.5% BWT daily; *definite* if drinking >10% BWT daily).
   Optional: verify polyuria (*probable* if urinating > 3% BWT daily; *definite* if drinking >5% BWT daily)

2) **Check Blood**:
   a) Urea, creatinine, hypercalcaemia (***chronic renal failure?***)
   b) Hyperglycaemia (***diabetes mellitus?***)
   c) ACTH (***PPID?***)

3) **Check Urine**:
   a) SG <1.008 (***psychogenic polydipsia, diabetes insipidus?***)
   b) SG 1.008-1.014 (***chronic renal failure?***)
   c) SG > 1.020 – polydipsia might be intermittent (***psychogenic polydipsia?***)
   d) Glucose+ (***diabetes mellitus***, alpha-2 sedatives, stress)

4) **Test for Renal Concentrating Ability (Modified water deprivation test)**
   Aims to differentiate ***psychogenic polydipsia*** from ***diabetes insipidus***
   a) Only perform test if SG < 1.020; normal serum creatinine, no dehydration
   b) Weigh horse if possible
   c) Allow access to restricted water (e.g. offer 0.5% BWT as water q 3 hours)
   d) Re-weigh if possible and check urine SG and serum creatinine q 6 hours
   e) Stop test when:
      i) Urine SG > 1.020 (confirms renal concentrating ability and therefore ***psychogenic polydipsia***)
      ii) Concerns of harm (probable ***diabetes insipidus***)
         - Increased serum creatinine
         - 5% decrease in bodyweight
         - Signs of dehydration

5) **Tests for Diabetes Insipidus**
   a) Measure serum vasopressin at end of water deprivation period
      i) Vasopressin > 5 pmol/L – normal vasopressin secretion
      ii) Vasopressin < 5 pmol/L – ***central diabetes insipidus***
   b) Vasopressin response test. Inject 0.05 micrograms/kg desmopressin acetate iv and measure urine SG over 24 hours
      i) Urine SG > 1.020 (normal response to vasopressin)
      ii) Urine SG < 1.020 (***nephrogenic diabetes insipidus***)