LAB PARAMETERS
Serum Calcium, Serum Creatinine, Urine Calcium and Urine Creatinine

FORMULA

\[
\text{FECa} = \frac{\text{Urine Calcium} \times \text{Serum Creatinine}}{\text{Serum Calcium} \times \text{Urine Creatinine}}
\]

Serum analytes (calcium and creatinine) **MUST** be in the same units e.g. mg/dL or umol/day etc...

Urine analytes (calcium and creatinine) **MUST** be in the same units e.g. mg/dL or umol/day etc...

Urine and Serum analytes **CAN** be in different units

< 0.01
Familial Hypocalciuric Hypercalcaemia

> 0.01
Primary Hyperparathyroidism

"GRAY ZONE OF 0.01-0.02"

FHH is characterized by a triad of hypercalcemia, inappropriately normal or elevated parathyroid hormone, and a low fractional excretion of calcium (FECa) < 0.01. A diagnostic threshold of FECa less than 0.01 has traditionally been accepted for distinguishing between familial hypocalciuric hypercalcaemia and primary hyperparathyroidism. FECa in a "gray zone" between 0.01 and 0.02 has been reported in some subjects with FHH; thus, using a strict cutoff of 0.01 may lead to some cases of FHH being missed. Indeed, the use of a higher threshold of 0.02 was shown in a retrospective study to have a diagnostic sensitivity of 98% for FHH.

AVOID THESE PITFALLS

Causes of hypocalciuria should be ruled out prior to diagnosing FHH. These include...
- Low calcium diet, mild renal insufficiency, thiazide diuretic, lithium exposure, and hypovitaminosis D

REFERENCES
- S.E. Christensen, PH. Nielsen, P. Vestergaard, L. Mosekilde Familial hypocalciuric hypercalcaemia: a review Curr Opin Endocrinol Diabetes Obes, 18 (6) (2011 Dec), pp. 359-370