

Low calcium? Low or inappropriately normal parathyroid hormone (PTH)? These clues can point to something deeper.¹

SUSPECT & DETECT ADH1



Autosomal dominant hypocalcemia type 1 (ADH1) may be rare, but it is a distinct, common genetic form of hypoparathyroidism that is still significantly underrecognized.¹

ADH1 is distinct from other forms of hypoparathyroidism because of overly sensitive calcium-sensing receptors (CaSR) leading to¹:



Reduced PTH secretion



Reduced renal calcium reabsorption

Gain-of-function variants in *CASR*, the calcium-sensing receptor gene, may lead to ADH1¹

In ADH1, overly sensitive calcium-sensing receptors (CaSR) dysregulate calcium homeostasis.¹

Normal CaSR function¹

Low blood Ca^{2+} detected appropriately



↑ PTH



↑ Ca^{2+} reabsorption

↑ Serum Ca^{2+} concentrations

↓ Urinary Ca^{2+} concentrations

Overly sensitive CaSR function¹

Low blood Ca^{2+} detected as “normal”



↓ PTH



↓ Ca^{2+} reabsorption

↓ Serum Ca^{2+} concentrations

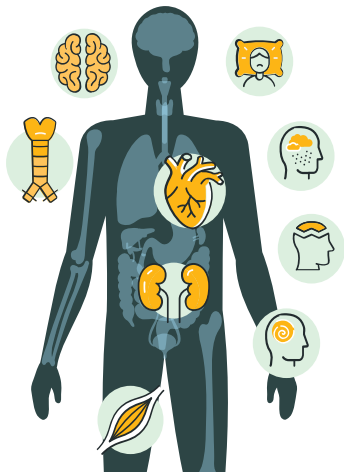
↑ Urinary Ca^{2+} concentrations

When surgery isn't the cause, genetic testing of the *CASR* gene can help confirm an ADH1 diagnosis and provide clarity.^{1,2}

An accurate diagnosis informs disease management¹:

- Individualized treatment strategies
- Patient support (including genetic counseling and family planning)
- Patient advocacy resources

Symptoms of ADH1 can stem from low serum calcium and may resemble other hypocalcemia-related disorders¹



Symptoms may include¹:

Physical symptoms

- Muscle cramps and spasms, including tetany
- Fatigue

Life-threatening symptoms

- Seizures
- Laryngospasms, spasms of the vocal cords
- Arrhythmias or heart rhythm disorders



Diagnostic delays have been challenging for patients

Symptoms may begin in infancy—yet many patients may not be accurately diagnosed with ADH1 until adulthood.

Based on a scientific literature review, there has been a **twenty-plus-year gap** between median age of diagnosis for a hypocalcemia-related disorder (4 years) and genetic confirmation of ADH1 (25 years).¹

Conventional therapies don't address the root cause of ADH1¹

Conventional therapy with calcium supplementation and active vitamin D may lead to long-term complications such as nephrocalcinosis, nephrolithiasis, and kidney failure. There are currently no medications specifically indicated to treat ADH1.¹

Genetic testing of the *CASR* gene can help give an accurate diagnosis of ADH1 when surgery isn't the cause.³



Suspect ADH1? Confirm it.

Take the next step: Learn more or order a test kit.

References: 1. Roszko KL, Stapleton Smith LM, Sridhar AV, et al. Autosomal dominant hypocalcemia type 1: a systematic review. *J Bone Miner Res.* 2022;37(10):1926-1935. doi:10.1002/jbmr.4659 2. Roszko KL, Bi RD, Mannstadt M. Autosomal dominant hypocalcemia (hypoparathyroidism) types 1 and 2. *Front Physiol.* 2016;7:458. doi:10.3389/fphys.2016.00458 3. Mannstadt M, Mathew A, Sridhar A, Stapleton Smith L, Roberts MS, Adler S. Next generation sequencing for detection of underlying genetic causes of nonsurgical hypoparathyroidism: preliminary results from a sponsored testing program. *J Endocr Soc.* 2023;7(Suppl 1):A284. doi:10.1210/endo/bvad114.527