

▲ Veterinary Prescription Only

VETD3 NANO SHOTS

Highly Concentrated Nano-Emulsified Vitamin D3

4 × 5 mL
CLINIC PACK SIZE

60,000 IU
PER 5 ML VIAL

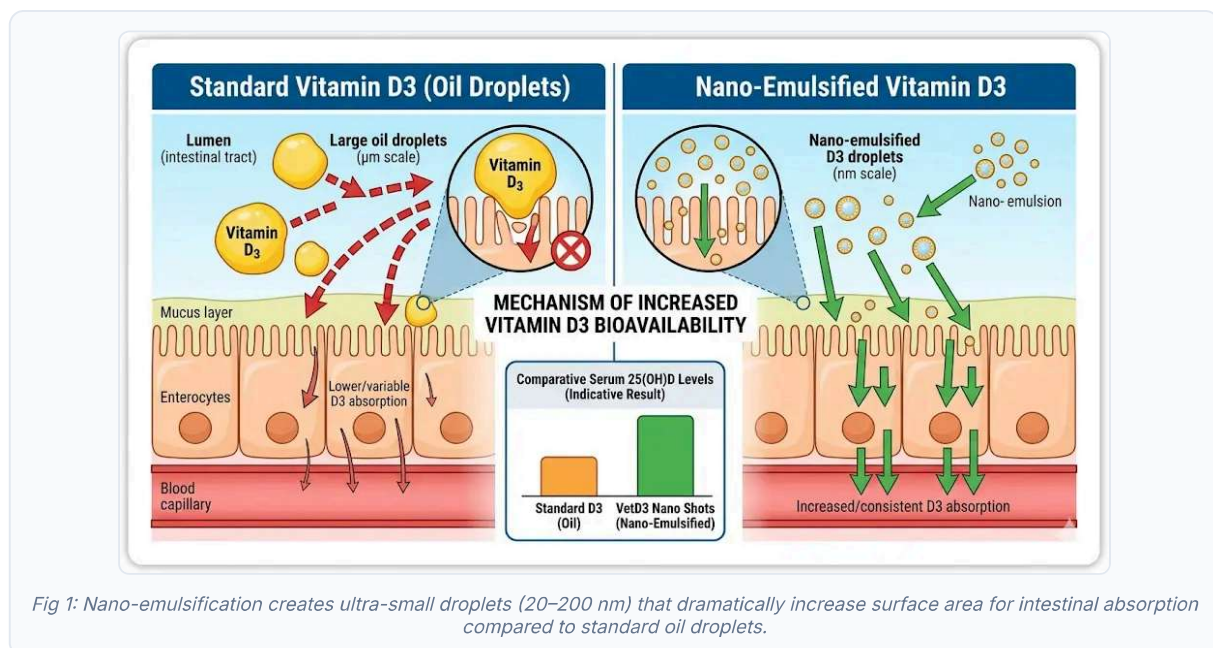
12,000 IU
PER 1 ML

1. PHYSIOLOGICAL RATIONALE

Vitamin D plays a central endocrine role in maintaining calcium and phosphorus balance. Unlike humans, **dogs and cats rely almost entirely on dietary sources of vitamin D** — cutaneous synthesis from UV exposure is negligible. Active vitamin D (calcitriol) regulates absorption in the intestine, kidney, and bone. Deficiency leads to poor bone mineralisation, pathological fractures, and neuromuscular dysfunction.

2. THE NANO-EMULSIFICATION ADVANTAGE

Vitamin D3 is fat-soluble with variable oral absorption, dependent on bile acid secretion and intestinal fat handling. Conventional oil-based drops have large particle sizes that limit GI dispersion.



Superior Bioavailability: By dispersing spontaneously in aqueous GI fluid, nano-emulsified cholecalciferol delivers more consistent, predictable uptake. This is critical in animals with fat malabsorption or GI compromise (e.g., EPI, IBD, protein-losing enteropathy) where conventional D3 absorption is unreliable.

3. COMPOSITION & PACK INFORMATION

Parameter	Details
Active Ingredient	Nano-emulsified Vitamin D3 (Cholecalciferol)
Formulation	High-bioavailability oral nano-emulsion solution
Target Species	Canine & Feline
Storage	Store below 25°C; protect from direct light and heat; do not freeze.

4. PRIMARY CLINICAL INDICATIONS

- **Growth phases:** Puppies/kittens with increased skeletal demand requiring reliable D3 availability.
- **Orthopaedic recovery:** Post-fracture repair and bone remodelling support.
- **Dietary insufficiency:** Confirmed by serum 25(OH)D testing.
- **GI malabsorption patients:** Protein-losing enteropathy, EPI, IBD.

5. SAFETY, TOXICITY & MONITORING

Critical Safety Note — Narrow Therapeutic Margin

Because VetD3 Nano Shots is highly concentrated (12,000 IU/mL), the gap between therapeutic and toxic doses is small. Excess supplementation leads to hypercalcaemia, ectopic soft-tissue mineralisation (kidneys, myocardium), and irreversible organ damage.

Baseline serum calcium, phosphorus, and 25(OH)D levels MUST be measured before initiating therapy.

Recommended Monitoring Parameters:

- Serum calcium (baseline + 4-week)
- Serum phosphorus
- 25-hydroxyvitamin D [25(OH)D]
- BUN & creatinine (renal function)
- PTH if clinically indicated
- Monitor signs of hypercalcaemia

⚠ Signs of Hypercalcaemia (Stop & Call Vet)

Polyuria / polydipsia • Lethargy and weakness • Vomiting and inappetence • Muscle tremors • Constipation.

6. WEEKLY DOSING PROTOCOL

Rationale: The high concentration and enhanced bioavailability allow for a **Once-Weekly Dosing Strategy**, improving compliance and mitigating the risk of accidental daily overdosing. Administer orally (directly or mixed into a small amount of food). Shake gently before use.

Patient Weight	Suggested ONCE WEEKLY Dose	Estimated Weekly IU
Small (<10 kg)	0.25 mL — 0.5 mL / week	3,000 — 6,000 IU
Medium (10–20 kg)	0.5 mL — 1.0 mL / week	6,000 — 12,000 IU
Large (20–40 kg)	1.0 mL — 2.0 mL / week	12,000 — 24,000 IU
Giant (>40 kg)	2.0 mL — 3.0 mL / week	24,000 — 36,000 IU

*Doses are indicative for deficiency correction. Always titrate based on 4-week follow-up serum 25(OH)D and calcium levels.

🧴 Dispensing & Syringe Safety

Because doses are fractionated, VetD3 Nano Shots **must be drawn and administered using a 1 mL graded oral syringe**. Never dose freehand or using standard teaspoon measurements.

7. SELECTED CLINICAL REFERENCES

- Corbee RJ. Vitamin D in health and disease in dogs and cats. *Adv Small Anim Care*. 2020;1(1):265–277.
- Weidner N, et al. Vitamin D metabolism and disorders in dogs and cats. *J Small Anim Pract*. 2022;63(3):173–188.
- Sharma R, Bharti S, Kumar KH. Nanoemulsion oral solution of cholecalciferol vs soft gelatin capsules: an open-label, randomised, crossover bioavailability study. *Nutrients*. 2022.
- Deshpande RP, Bhosale P, Bhadekar R. Bioavailability of nanoemulsion formulations vs conventional fat-soluble preparations of vitamin D. *J Clin Diagn Res*. 2019.