

# New Effective Renal Protection



Bayer HealthCare  
Animal Health

**Renalzin**<sup>®</sup>

# Chronic Renal Disease (CRD)

## CRD – a common challenge

- CRD is a leading cause of morbidity & mortality in older cats, with increasing prevalence.<sup>1</sup>
- 1/3 of all cats older than 15 years suffer from CRD.<sup>2</sup>

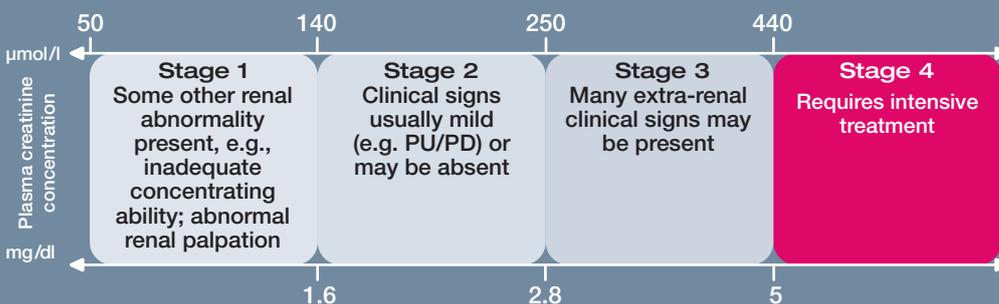
**Serious complication: phosphate retention.**

## An insidious disease

- Azotemia and urinalysis changes occur relatively late, due to the tremendous reserve capacity of the kidneys.
- Clinical signs often not evident until 80–85% of nephrons are non-functional.<sup>3</sup>
- Subtle signs of CRD may include changes in body weight and urine specific gravity over time.

**Wouldn't you want to intervene as early as possible?**

## Staging System for Chronic Kidney Disease (CKD)<sup>4</sup>



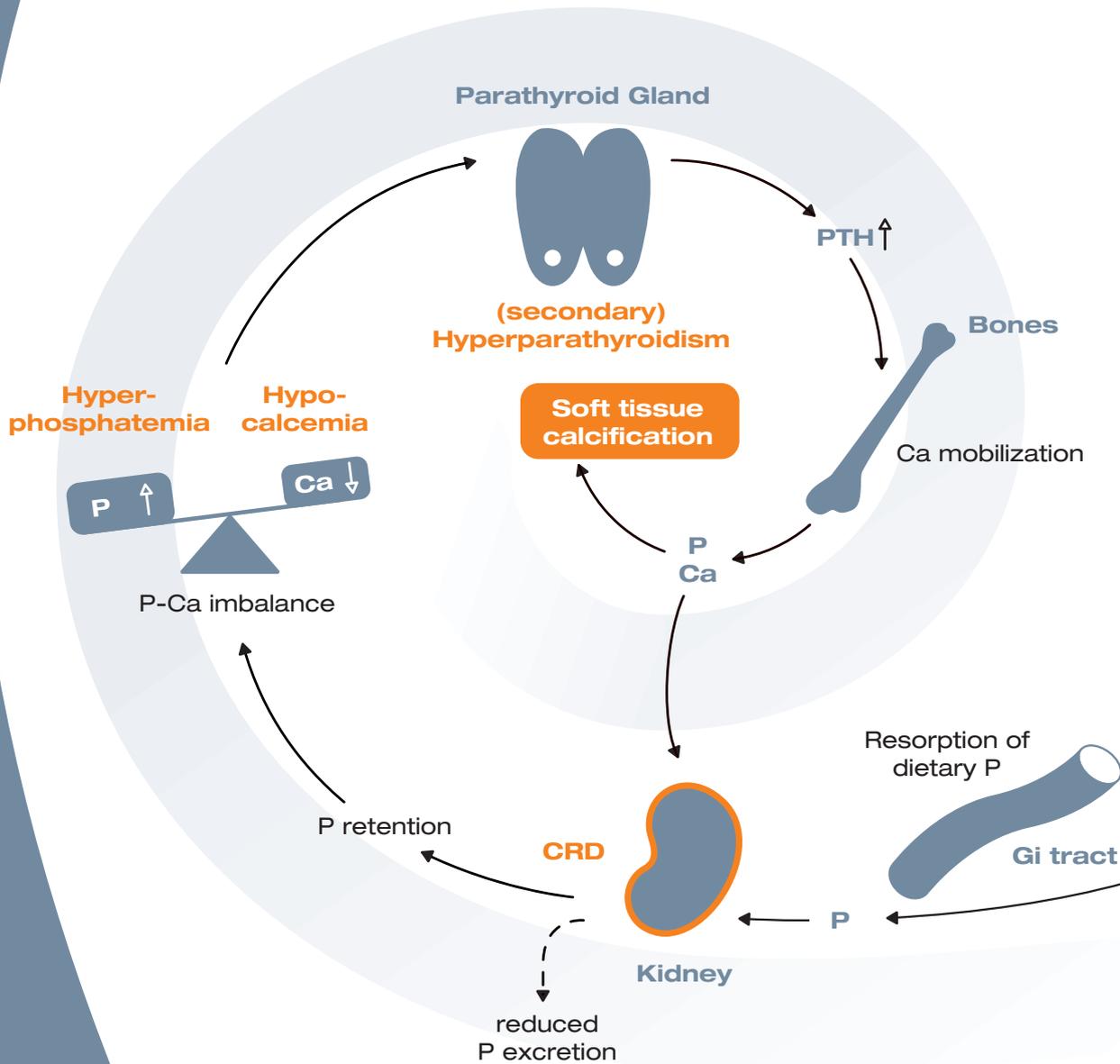
**Step 1:** Staging is initially based on fasting plasma creatinine assessed on at least two occasions in the stable patient.  
**Step 2:** Cases are then sub-staged based on proteinuria and blood pressure.

Keep Old Tigers Going Strong!

Renalzin<sup>®</sup>

# CRD Leads to Elevated Phosphorus and Soft Tissue Calcification

- Chronic renal disease is characterized by retention of phosphate
- Resulting phosphorus imbalance leads to secondary hyperparathyroidism
- Increased parathyroid hormone (PTH) mobilizes calcium from the bone and can result in soft tissue calcification
- PTH may also have direct harmful effects on the kidneys



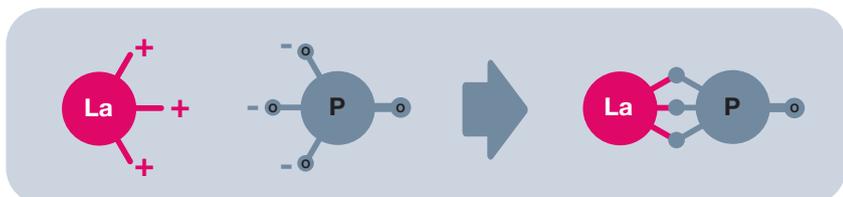
Restriction of phosphorus plays an essential role in curbing renal secondary hyperparathyroidism, soft tissue calcification and progression of renal failure.<sup>5,6</sup>

**Phosphate restriction before elevation of serum phosphate levels above the normal range may help control the cycle of hyperparathyroidism in CRD.<sup>7</sup>**

# Renoprotection through Limitation of Phosphate

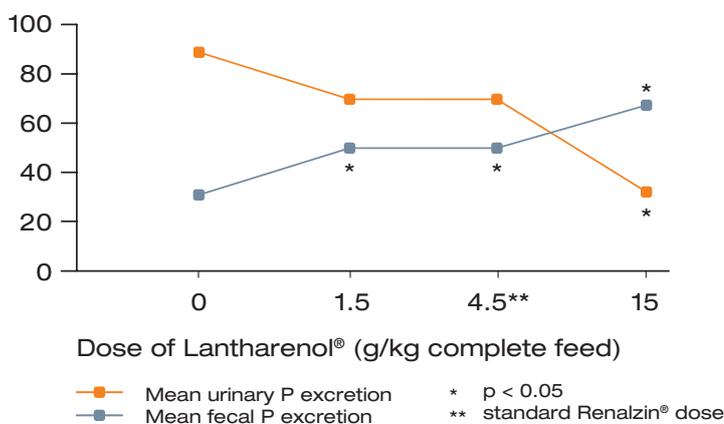
Main component of Renalzin® is Lantharenol®

Lantharenol® is composed of lanthanum carbonate, a potent new non-calcium- and non-aluminum-based phosphate binder.



Lantharenol® binds phosphate in the gastrointestinal tract to form an insoluble lanthanum salt, rendering the phosphorus indigestible and unable to cross the intestinal wall.

Renalzin effectively binds dietary phosphate even with normal feline diets<sup>8</sup>



Renalzin® significantly increased fecal elimination and decreased urinary excretion of phosphorus when administered with normal diet, while maintaining palatability.



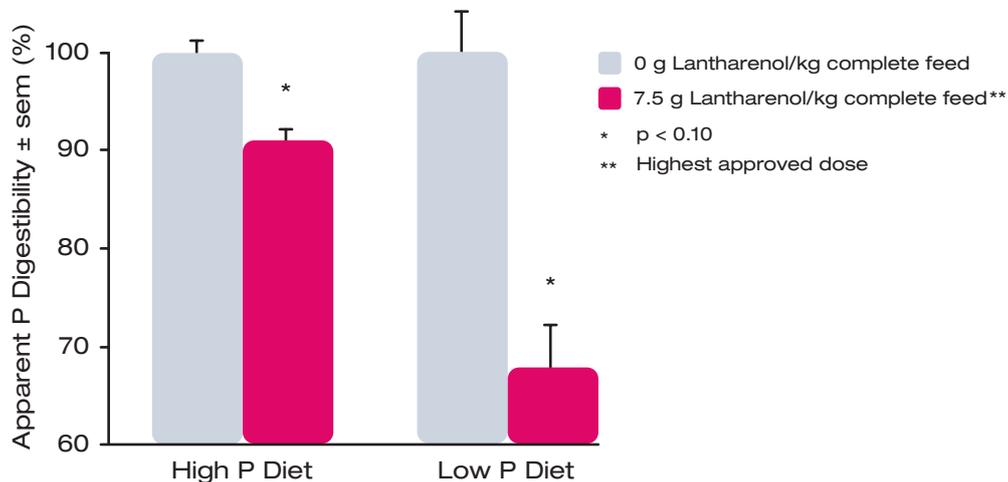
Long-term treatment with Renalzin® can enhance quality of life.

**Result: Shift in phosphorus elimination, effective renoprotection.**

**Renalzin®**

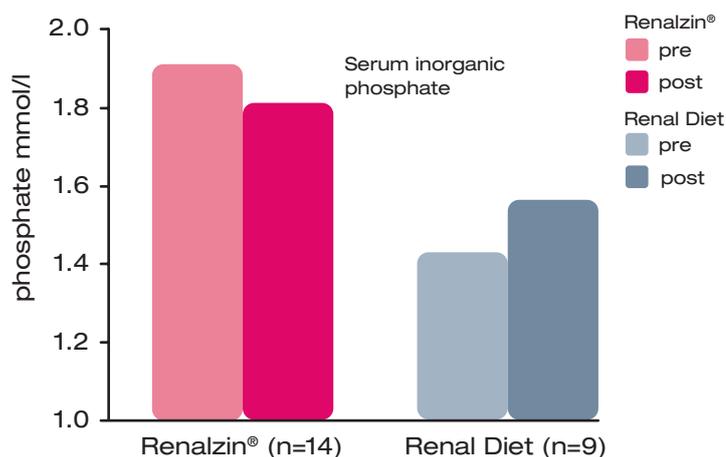
# Clinical Studies in Feline Patients Demonstrate Renalzin®'s Beneficial Effects

Renalzin® causes significant decreases in phosphate digestibility with both high and lower phosphate diets.<sup>9</sup>



Percentage change in apparent digestibility of phosphorus after supplementation of different feline diets with Renalzin®

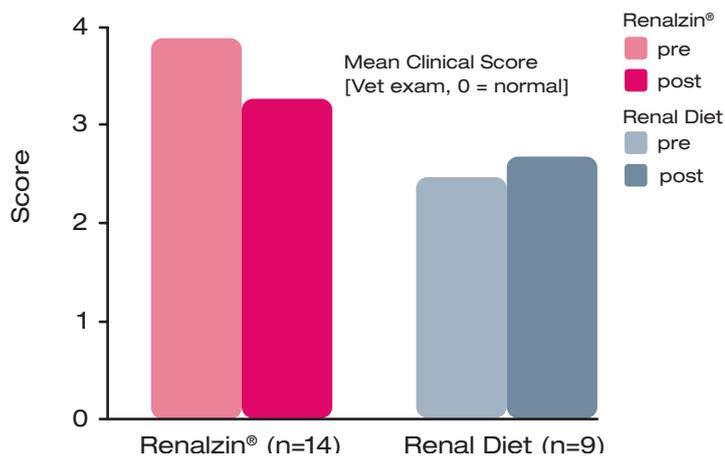
## Decrease in serum phosphate levels Clinical field study in cats with CRD<sup>10</sup>



Over a two-months observation period, cats given Renalzin® with standard maintenance diets non-restricted in phosphorus had a trend towards decrease in serum phosphate levels.

# Renalzin® – Safe & Effective Renoprotection

Improvement in clinical examination scores<sup>10</sup>  
Clinical field study in cats with CRD



Cats given Renalzin® with their normal diet for 2 months showed improvement in general clinical examination parameters as assessed by their veterinarians.

## Safety

- Renalzin® was demonstrated to be safe when administered up to 10 times the recommended dosing level.
- No signs of intolerability seen during efficacy and safety studies.
- Renalzin® contains a calcium-free and aluminum-free phosphate binder – Lantharenol®.
- Lantharenol® remains in the gastrointestinal tract and systemic absorption is negligible.



**Renalzin®**

# Renalzin® Means Compliance – Compliance Means Treatment Success

- **Every food regimen is possible**

Independent of:

- wet or dry food
- once or twice daily feeding
- renal diet or regular food

Renalzin® can be added in every case.

- **Food intake as usual**

Neutral taste of Renalzin® ensures that the acceptance of the food given remains unchanged.

In a clinical field study, 85% of cats with CRD given Renalzin® with their normal diet showed improvement or no change in feed intake.<sup>10</sup>

- **Convenience of application**

Renalzin® comes in a convenient applicator and is very easy to apply: **one pump applies 1 ml**



## Lantharenol® has additional supporting ingredients:

- **Kaolin**  
well-known intestinal toxin binder
- **Vitamin E**  
acts as a powerful biological antioxidant

1. Lulich JP, O'Brien TD, Osborne CA, Polzin DJ. Feline renal failure: questions, answers, questions. *Compend Cont Ed Pract Vet* 1992, 14(2): 127-151

2. Polzin DJ, Osborne CA, Adams LG, Lulich JP. Medical management of feline chronic renal failure. In: Bonagura JD, Kirk RW (eds). *Current Veterinary Therapy XI*. Philadelphia, PA, Saunders, 1992: 848-853

3. Grauer GF. Early detection of renal damage and disease in dogs and cats. *Vet Clin Small Anim* 2005, 35: 581-596

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5. Rubin SI. Chronic renal failure and its management and nephrolithiasis. *Vet Clin Small Anim* 1997, 27(6): 1331-1354

6. Barber PJ, Rawlings JM, Markwell, Elliott J. Effect of dietary phosphate restriction on renal secondary hyperparathyroidism in the cat. *J Small Anim Prac* 1999, 40: 62-70.

7. Polzin DJ, Osborne CA, Ross S, Jacob F. Dietary management of feline chronic renal failure: where are we now? In what direction are we headed? *J Feline Med Surgery* 2000, 2: 75-82

8. Schmidt B, Delpont P, Spiecker-Hauser U. Bay 78-1887, a novel lanthanum-based phosphate binder, decreases intestinal phosphorus absorption in cats. *J vet Pharmacol Therap* 2006, 29 (Suppl 1): 206-207

9. Schmidt B, Spiecker-Hauser U, Gropp J. Effect of Lantharenol® on apparent phosphorus absorption from a conventional feline maintenance diet and a renal diet for cats. *Proc Soc Nutr Physiol* (2008) 17, in press

10. Data submitted for publication