

Using RenalTech™ to improve CKD outcomes and overall feline health

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Recent updates to International Renal Interest Society (IRIS) guidelines for chronic kidney disease (CKD) in cats identify new strategies to delay disease progression. However, this requires finding disease before kidney damage is present, which continues to be a challenge.

RenalTech™ is a predictive diagnostic tool that allows veterinarians to address CKD proactively, before kidney damage occurs. Blending artificial intelligence (AI), machine learning and 20 years of data from 150,000 cats, RenalTech™ predicts whether or not a cat will develop CKD within two years. Using this information, veterinarians can develop highly personalized care plans to improve feline health, detect and treat other health conditions and potentially delay CKD onset and progression. RenalTech™ is the first in a series of predictive tools that reflect the combined expertise of Mars Petcare, including the Waltham Centre for Pet Nutrition and Antech Diagnostics.

RenalTech™ requires a minimum database that includes creatinine, blood urea nitrogen (BUN), white blood cell count, urine specific gravity, urine protein, urine pH and approximate age in order to provide a RenalTech™ status. The care pathway for each result follows:

RenalTech™ Status	Diagnosis	Next step	Additional follow up
Positive	Pt. will develop CKD within the next 24 months (accuracy greater than 95% ¹).* *A positive RenalTech™ status can indicate that a patient already has CKD.	Minimum database within next 3, 6 or 12 months based on age and health status. Every 3 to 6 months thereafter to evaluate CKD progression.	Abdominal imaging for renal size, architecture; rule out co-morbidities such as hyperthyroidism, cardiac disease, hypertension, diabetes; Apply IRIS guidelines to stage and treat following diagnosis.
Negative	Pt. will not develop CKD within the next 24 months (accuracy greater than 95% ¹).	Re-evaluate pt. with minimum database within the next 3, 6 or 12 months depending on age and health status. Continue to monitor RenalTech™ status.	Continue to monitor and recheck based on age and complete health status.
Inconclusive	Additional data required to report positive or negative status with statistical certainty.	Perform complete blood count, biochemical profile and urinalysis within next 3 to 6 months. Recheck RenalTech™ status.	Continue to monitor for signs of CKD (e.g., weight loss, polyuria, polydipsia) and recheck based on age and complete health status.

Additional strategies to ensure optimal health for cats with a positive RenalTech™ status include: maintaining good oral health; avoiding nephrotoxic drugs; counseling owners to monitor for decreased appetite, weight loss and increased urinary and drinking habits; feeding high quality food with moderate phosphorous; ensuring constant access to fresh, clean water; and considering fatty acid supplements. RenalTech™ early adopters report pet owners feel empowered by the information RenalTech™ provides, and significantly, are engaged in a more rigorous care plan to maximize the benefits of early intervention. To learn more about RenalTech™, visit: www.antechdiagnostics.com/renaltech

¹Bradley, R, Tagkopoulos, I, Kim, M, et al. Predicting early risk of chronic kidney disease in cats using routine clinical laboratory tests and machine learning. *J Vet Intern Med.* 2019; 33: 2644– 2656. <https://doi.org/10.1111/jvim.15623>