GFR Basics
Determination of glomerular filtration rate (GFR) is considered crucial in the evaluation of companion animal (cat, dog) renal disease, because the GFR directly relates to the functional renal mass. GFR is essentially that volume of plasma that would have to be filtered by glomeruli each minute to account for the amount of a given substance appearing in the urine.

How is GFR Determined and Interpreted?
GFR has been successfully determined with a variety of substances that are principally excreted by glomerular filtration including endogenously produced creatinine and exogenously introduced creatinine, inulin and iohexol. As a rough clinical guideline, in chronic progressive renal disease, urinary concentrating ability is considered impaired after 66% of nephrons lose functionality, and azotemia appears after 75% are nonfunctional.

Our Service
DCPAH offers GFR determination based on single injection of iohexol (300 mg iodine equivalents/kg body weight) performed by the client veterinarian and submission of serum samples taken two, three, and four hours post-dose. Note that patients should be well hydrated and food withheld 12 hours prior to initiation of the GFR test. Red top Vacutainer™ or serum-separator tubes are appropriate for collection of serum. The veterinarian needs to supply the Toxicology Section with three serum samples, along with a submittal form including the times of sample collection to the nearest minute, dose of iohexol given (or preferably volume and concentration) and animal body weight. Iohexol is determined by Inductively Coupled Plasma-Mass Spectrometry (ICP/MS) focusing on the iodine components of iohexol. Results are supplied as clearance with units of ml/min/kg, as well as the percentage reduction in GFR relative to a cohort of normals from the same species. GFR has also been determined in research animals such as rats, sea turtles, and iguanas.

For more information, please contact the Toxicology lab at 517.353.1683, or visit our website at animalhealth.msu.edu.
DCPAH is a full-service veterinary diagnostic laboratory, fully accredited by the AAVLD for all species through 2017.

Sample Submission Forms
Visit our website at animalhealth.msu.edu to access our most current submittal forms. Customized forms preprinted with your clinic information are also available at no cost via the Product Order Form.

Unbeatable Shipping
DCPAH offers a variety of shipping options. Our mailers comply with U.S. Postal Service, FedEx, UPS, and DHL regulations. All UPS mailers include prepaid overnight weekday delivery. All U.S. Postal Service mailers include prepaid delivery; delivery time will vary depending on your location.

Order Mailing Supplies
Individual, insulated, and biopsy mailers are available. Contact us at 517.353.1683 or complete the Product Order Form available online at animalhealth.msu.edu.

Packaging and Mailing Samples
For shipping recommendations for individual tests, please refer to the information provided at animalhealth.msu.edu under “Available Tests.”

Speak Directly to Experts
Our veterinary professionals are available for consultation and can help you interpret your test results to better manage the health of animals entrusted to you.

Get Results by Email and Online
Had it with the fax machine? Contact us at 517.353.1683 to have results delivered by email.

All DCPAH clients also have free, quick access to view results online through WebView. Reports are posted to the web hourly. Visit animalhealth.msu.edu and click “Log In” to request access to your diagnostic results.

Expect Quality in Testing and Service
DCPAH is a leader in establishing technical guidelines for public veterinary diagnostic laboratories in the United States and maintains a quality assurance team dedicated to promoting accuracy and reliability.

Customer Service Hours
Monday through Friday, 7:30 a.m. to 5:30 p.m. EST