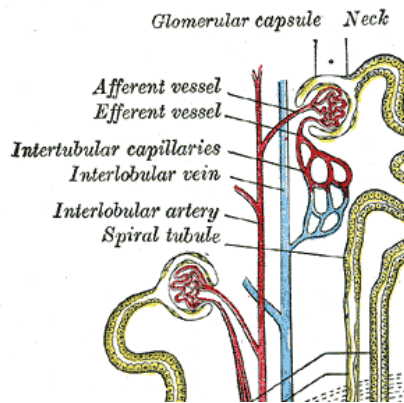


Glomerular Filtration Rate



Glomerulus from *Gray's Anatomy*

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.

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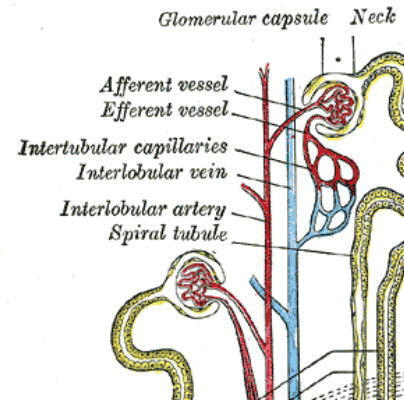


Diagnostic Center for Population and Animal Health

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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.

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Speak Directly to Experts

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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

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