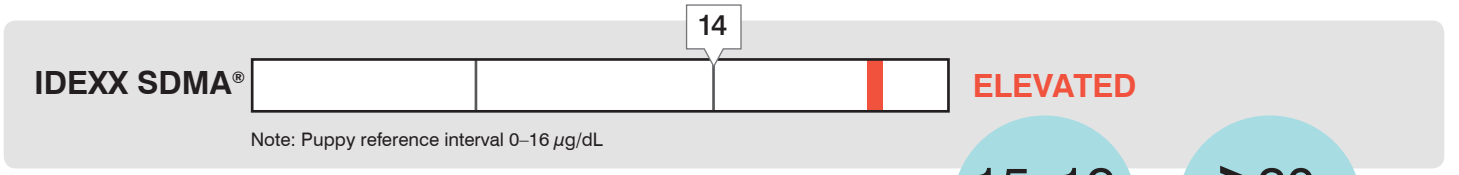
IDEXX SDMA® Algorithm

An elevated SDMA* concentration is a reflection of impaired glomerular filtration rate (GFR). Both primary kidney disease and secondary kidney insults, such as concurrent disease, can cause an elevation in SDMA concentration. Follow this algorithm to investigate elevated SDMA concentrations and determine whether acute, active, or chronic injury is occurring and how to begin to investigate, manage, and monitor disease.



15–19 µg/dL

≥20 µg/dL

Evaluate complete urinalysis

Other evidence of decreased GFR or kidney disease?

- Inappropriate urine specific gravity
- Active urine sediment
- Proteinuria (inactive sediment)
- Elevated Urea, creatinine, or phosphorus
- Creatinine increasing within the reference interval
- Polyuria/polydipsia (PU/PD)
- Anorexia or weight loss
- Abnormal kidney palpation or imaging
- Hypertension

No

Recheck kidney panel in 2–4 weeks
(minimum of SDMA, Urea, creatinine, phosphorus, urinalysis)

No

Evaluate patient in 6 months

Yes

Persistent elevation in SDMA concentration

Impaired GFR: ACT NOW

Detects diseases of the kidney sooner[1–3]

Examples:

- Chronic kidney disease (CKD)—see International Renal Interest Society (IRIS) guidelines
- Acute kidney injury
- Pyelonephritis

and/or

Reflects other disease processes affecting the kidneys[6]

Examples:

- Hypertension
- Severe dehydration
- Toxicity (e.g., NSAIDs, ethylene glycol, lilies)
- Hyperthyroidism (feline)

See reverse for the initial steps in investigating, managing, and monitoring impaired GFR as identified by an elevated SDMA

Initial steps in investigating, managing, and monitoring impaired GFR as identified by an elevated SDMA

IMM PROTOCOL

Investigate

Underlying cause, treatable condition, concurrent disease, chronic kidney disease (CKD)

Underlying cause

Urinary tract infection (UTI)/pyelonephritis

Toxicity (e.g., NSAIDs, ethylene glycol, lilies)

Acute kidney Injury

Systemic hypertension

Chronic kidney disease (CKD)

Consider performing

Urine culture and minimum inhibitory concentration (MIC) susceptibility

Infectious disease testing

Abdominal imaging

Urine protein:creatine (UPC) ratio (proteinuria)

Blood pressure

Concurrent condition to assess

Hydration status

Thyroid status (feline)

Manage

Treat underlying disease, manage assessed kidney injury, adjust care protocols

Treat appropriately

Underlying disease (e.g., pyelonephritis, infectious disease)

Dehydration

Take care with nephrotoxic medications (e.g., NSAIDs)

Hypertension

Proteinuria

Additional support

Ample, clean water

Kidney-supportive diet if warranted

Adjust anaesthesia protocols

Provide fluids (intravenous or subcutaneous)

Oxygen support prior to, during, and after procedure

Adjust pain management

Monitor

Manage and monitor outcomes

Monitor renal biomarkers

Trended testing of the following:

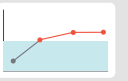
SDMA, Urea, creatinine, and phosphorus

Urinalysis

Blood pressure

Outcome

GFR impairment, stable



SDMA remains increased, but stable

GFR remains impaired but stable

Consider CKD diagnosis, refer to IRIS staging and treatment guidelines

Institute appropriate supportive care and monitoring

GFR impairment, progressive

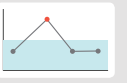
SDMA continues to increase

Ongoing active kidney injury

Revisit investigate: repeat or perform additional diagnostics

Institute ongoing supportive care

GFR restoration



SDMA returns to normal

Recovery from mild injury

Response to appropriate therapy

Compensatory mechanisms

Recheck within 6 months–1 year

Remember that patients can move back to an investigation stage from management or monitoring depending on progression or change in renal status.

*Symmetric dimethylarginine.

For a complete list of references, visit idexx.com/sdma.

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