# Capture Myopathy

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Also known as white muscle disease, stress myopathy, exertional myopathy, exertional rhabdomyolysis

- Condition associated with pursuit, capture, restraint and/or transportation of animals
- Predisposing factors (SECONDS):
    - S: species, especially prey – ungulates and long-legged wading birds overrepresented though any species susceptible
    - E: environment – high temperature and humidity, steep terrain, difficult footing
    - C: capture-related – high speed chase, prolonged exertion or restraint, unnatural positioning during restraint, prolonged transport, recurrent stress
    - O: other underlying disease
    - N: nutrition – vitamin E and/or selenium deficiency, obesity/over conditioning
    - D: drug use that leads to excitement, muscle rigidity, hypoventilation, and/or hyperthermia
    - S: signalment – age and sex (higher risk in very old or young animals; some sex predispositions in different species)
- Pathophysiology:
    - Significant increase in muscle activity from overexertion and/or struggling
        - Altered blood flow to the tissues leads to decreased oxygen and nutrient delivery
            - Increased lactic acid and free radical production
        - Exhaustion of muscular energy stores
        - Damaged muscles cells release myoglobin, which damages kidneys
- Clinical signs:
    - Severe muscle stiffness and pain, trembling, rapid breathing, ataxia, paresis/paralysis, torticollis, dark red urine, obtunded mentation, death
    - Signs vary by species, individual animal and history
- Treatment:
    - Pain management
        - Opioids +/- NSAIDS once well-hydrated
        - Steroids not generally indicated in rehabilitation settings
            - Often used in the field where continued monitoring/rechecks not possible
    - Muscle relaxants
        - Benzodiazepines
        - Methocarbamol

- Fluid therapy (IV or IO preferred)
  - Correct dehydration
  - Perfuse kidneys
  - Correct pH and electrolyte imbalances
- Thermal support
  - Reduce body temperature as needed
    - Only after recording an abnormally high temperature
    - Monitor throughout cooling process and *stop cooling* once temperature is within ~1 degree of normal range to prevent overcooling
- Dietary supplements
  - Vitamin E
    - Fat soluble; toxicity possible
  - Selenium
  - Antioxidants
- Physical therapy
  - Consider risks/benefits of additional handling
  - Minimal handling options preferred (e.g. sling, pool)
- Nutritional support

- Prognosis:
  - Generally poor once clinical signs manifest
  - <u>Prevention is key</u>