**Adjusting IV Fluid Selection for Dogs and Cats Based on Sodium Concentration**

**Is patient's sodium concentration normal?**
- **yes**
  - Use same fluid type for resuscitation and rehydration. Consider patient's life stage and species.

  **Adult Dog:**
  - Normal Na: 145 mEq/L
  - Ideal Fluid Type: Plasma-Lyte, Normosol

  **Adult Cat:**
  - Normal Na: 155 mEq/L
  - Ideal Fluid Type: Plasma-Lyte, Normosol

  **Pediatric Dog or Cat:**
  - Lower Na than adults
  - Ideal Fluid Type: LRS, Plasma-Lyte or Normosol

- **no**
  - **Does the patient require fluid resuscitation?**
    - **yes**
      - **Fluid Resuscitation**
        - Select a fluid with a similar Na concentration as the patient and follow Algorithm 2: Resuscitation
        - **Hypernatremia:**
          - Select NaCl 0.9% if patient's Na is 160-165 mEq/L (in non-azotemic patients), **OR**
          - Use custom fluids with NaCl 7.2% (1.23 mEq Na/mL). Add additional Na to a base buffered isotonic fluid to achieve the desired Na concentration
        - **Hyponatremia:**
          - Select LRS if patient's Na is 130-145 mEq/L, **OR**
          - Using sterile water, dilute a buffered isotonic fluid to achieve the desired Na concentration
      - **Rehydration**
        - Assess duration of Na derangement (based on history, neurologic status, etc.)
        - **Chronic Na Derangement (>24hr)**
          - Target rate of Na correction = 0.5 mEq/hr
        - **Acute Na Derangement (<24hr)**
          - Target rate of Na correction = 1 mEq/hr
        - 2 different strategies may be used to correct Na, using different fluid choices

  - **no**
    - **Monitoring:**
      - Monitor vitals and watch for neurological signs
      - Recheck electrolytes every 4-6hr to assess rate of Na correction

**Hypernatremia (>160 mEq/L)**
- Calculate the Free Water Deficit (FWD) in L = 0.6 x lean body weight (kg) x [patient serum Na/140 – 1]
- Use D5W to replace the FWD
- Calculate Fluid Rate Replacement: FWD replacement time (hr) for chronic hypernatremia = (Patient Na – Target Na) x 2
- If patient is also dehydrated, select a buffered isotonic fluid to rehydrate patient over 12-24 hours (see Algorithm 3: Rehydration)

**Hyponatremia (<140 mEq/L in dogs, <149 mEq/L in cats)**
- Confirm pseudohyponatremia from hyperglycemia is not present
- Calculate the Na deficit in mEq = 0.6 x body weight (kg) x (Na [mEq/L] – patient Na [mEq/L])
- If patient is also dehydrated, select a buffered isotonic fluid to rehydrate patient over 12-24 hours (see Algorithm 3: Rehydration)

**Monitoring:**
- Monitor vitals and watch for neurological signs
- Recheck electrolytes every 4-6hr to assess rate of Na correction

**Rehydration**
Use same fluid type for resuscitation and rehydration. Consider patient's life stage and species.

**Does the patient require fluid resuscitation?**
- **yes**
  - **Fluid Resuscitation**
    - Select a fluid with a similar Na concentration as the patient and follow Algorithm 2: Resuscitation
    - **Hypernatremia:**
      - Select NaCl 0.9% if patient’s Na is 160-165 mEq/L (in non-azotemic patients), **OR**
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    - 2 different strategies may be used to correct Na, using different fluid choices

**Monitoring:**
- Monitor vitals and watch for neurological signs
- Recheck electrolytes every 4-6hr to assess rate of Na correction

**The 2024 Fluid Therapy Guidelines for Dogs and Cats are available at aaha.org/fluid-therapy.**

These guidelines were prepared by a Task Force of experts convened by the American Animal Hospital Association (AAHA) and were subjected to a formal peer-review process. This document is intended as a guideline only, not an AAHA standard of care. These guidelines and recommendations should not be construed as dictating an exclusive protocol, course of treatment, or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to each individual practice setting. ©2024 AAHA.