Management of DKA in Persons Younger than 20 Years

**Compete initial evaluation**
- Start IV fluids: 10 to 20 mL per kg, NaCl 0.9% in the initial hour

**Determine hydration status**
- Hypovolemic shock
  - Administer NaCl 0.9% (20 mL per kg per hour) and/or plasma expander until shock resolved
- Mild hypotension
  - Administer NaCl 0.9% (10 mL per kg per hour) for initial hour
  - Replace fluid deficit evenly over 48 hours with NaCl 0.45 to 0.9%*

**Insulin infusion**
- Regular insulin
  - 0.1 units per kg per hour
- Short- or rapid-acting insulin analogue
  - 0.3 units per kg every hour or 0.15 to 0.20 units per kg every 2 hours
- SC insulin replacement initiated

**Continue until acidosis clears (pH > 7.3; HCO₃⁻ level > 15 mEq per L)**
- Decrease to 0.05 units per kg per hour until SC insulin replacement initiated

**Assess need for bicarbonate**
- pH ≥ 7.0
  - Over 1 hour, administer NaHCO₃ (2 mEq per kg) added to NaCl to produce a solution that does not exceed 155 mEq per L (155 mmol per L) of Na over 1 hour
- pH < 7.0
  - Continue as above

**Potassium**
- K level < 2.5 mEq per L
  - Administer 1 mEq per kg of IV K over 1 hour
  - Withhold insulin until K level > 2.5
- K level 2.5 to 3.5 mEq per L
  - Continue as above
- K level 3.5 to 5.5 mEq per L
  - Administer K 30 to 40 mEq per L (30 to 40 mmol per L) in IV solution to maintain K level at 3.5 to 5 mEq per L
- K level > 5.0 mEq per L
  - Do not give IV K

**Insulin infusion**
- Regular insulin
  - 0.1 units per kg every hour or 0.15 to 0.20 units per kg every 2 hours
- Short- or rapid-acting insulin analogue
  - 0.3 units per kg

**Replace fluid deficit evenly over 48 hours with NaCl 0.45 to 0.9%* when serum glucose level reaches 250 mg per dL (13.88 mmol per L), change to dextrose 5% with NaCl 0.45 to 0.75%, at a rate to complete rehydration in 48 hours and to maintain glucose level between 150 and 250 mg per dL (8.32 to 13.88 mmol per L), dextrose 10% with electrolytes may be required

**Assess for precipitating causes**
- Rehydration
- Look for precipitating causes

**Check glucose and electrolyte levels every 2 to 4 hours until stable**
- Look for precipitating causes
- After resolution of DKA, initiate SC insulin (0.5 to 1.0 units per kg per day given as two-thirds in the a.m. [one-third short-acting, two-thirds intermediate-acting], one-third in the p.m. [one-half short-acting, one-half intermediate-acting]) or 0.1 to 0.25 units per kg regular insulin every 6 to 8 hours during the first 24 hours for new patients to determine insulin requirements.

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*—Usually 1.5 times the 24-hour maintenance requirements (approximately 5 mL per kg per hour) will accomplish a smooth rehydration; do not exceed two times the maintenance requirements.