CLINICAL PATHWAY: Ketogenic Diet

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Inclusion Criteria: Diagnosis of epilepsy, completed pre-admission checklist (Appendix A), approved by ketogenic team
Exclusion Criteria: Fatty acid oxidation defects, porphyria, carnitine deficiency syndromes, pyruvate carboxylase deficiency

Labs

DAY 1:
- POC glucose (glucometer) BID if > 1 year old. If < 1 year old, POC glucose Q4h until glucose > 50 mg/dL for 24 hours, then BID thereafter
- CBC
- Chemistries
- Anti-epileptic medication levels per provider
- POC blood ketone/glucose testing BID and PRN for teaching and/or symptoms
- Urine ketones BID PRN for teaching (as determined by pre-admission keto team)
- I-STAT glucose if signs of hypoglycemia (refer to glucose management)

DAY 2:
- POC glucose (glucometer) BID if > 1 year old. If < 1 year old, POC glucose Q4h until glucose > 50 mg/dL for 24 hours, then BID thereafter
- POC blood ketone/glucose testing BID and PRN for teaching and/or symptoms
- Urine ketones BID PRN for teaching (as determined by pre-admission keto team)
- Review antiepileptic medication levels from day 1

DAY 3-4:
- POC glucose (glucometer) only if poor PO, vomiting, diarrhea *
- Antiepileptic medication levels, PRN

Nutrition*

DAY 1:
- Nutrition assessment with diet history
- Provide 100% maintenance fluids
- Fluid intake per RD schedule: limit fluids to diet decaf drinks, water, or non-herbal decaf tea
- RD calculates keto drink volume:
  - Meal 1: prepared liquid gives 1/3 calories of meal
  - Meal 2: prepared liquid gives 2/3 calories of meal
  - Meal 3: prepared liquid gives 100% calories of meal
  - If <5 yr old or tube feeding: can divide into 5-6 feeds

DAY 2:
Goal: tolerating 75-100% of fluid intake (of allowed fluids)
- Start full ketogenic diet if day 1 diet tolerated
- *If vomiting, lethargic or refusing to eat:*
  - Give 30 mL apple or orange juice (up to 4x/day)
  - Encourage 100% of fruit and vegetables during meals
  - Give fats as tolerated (can cut to ½ the amount)
- *If diarrhea:*
  - Cut the fat in meals to ½ the amount

DAY 3-4:
Goal: tolerating 75-100% of ketogenic diet
- *If vomiting, lethargic or refusing to eat:*
  - Give 30 mL apple or orange juice (up to 4x/day)
  - Encourage 100% of fruit and vegetables during meals
  - Give fats as tolerated (can cut to ½ the amount)
- *If diarrhea:*
  - Cut the fat in meals to ½ the amount

*** Glucose Management:**
If glucose <50 mg/dL and well appearing:
- Give 30 ml apple or orange juice
- Recheck vitals and glucose (glucometer) q1hr until glucose >50 mg/dL

If glucose <50 mg/dL and/or signs/symptoms of hypoglycemia:
- Give 30 mL apple or orange juice immediately
- Recheck vitals and glucose (glucometer) in 30 minutes.
- If glucose remains <50 +/- signs of hypoglycemia: give another 30 mL apple or orange juice
- If glucose still <50 mg/dL after 2nd juice: call MD

Nursing Care

- Insert PIV if needed

Vitals:
- Day 1-2: q4hr, if stable
- Day 3-4: q8hr while awake, if stable

Measurement:
- Day 1: height, weight, head circumference
- Day 2-4: weight daily

Assess and record, throughout admission:
- Mental status
- Seizure activity
- Symptoms of hypoglycemia

Education

DAY 1:
RN education goals/responsibilities:
- Parents taught and demonstrate POC urine ketone testing **OR** POC blood ketone/glucose testing

RD education goals/responsibilities:
Parents demonstrate understanding of:
- Rationale for ketogenic diet
- Potential complications and outcomes of diet
- Maintenance of ketosis
- Fluid schedule and keto drinks in hospital

DAY 2:
RN education goals/responsibilities:
- Reinforce teaching of POC urine ketone testing **OR** POC blood ketone/glucose testing

RD education goals/responsibilities:
Parents are able to:
- Repeat signs and symptoms of dehydration and hypoglycemia
- Describe exchange lists and exchange patterns
- Explain label reading and grocery lists
- Describe prevention and treatment of constipation

DAY 3:
RN education goals/responsibilities:
- Teach/demonstrate administering glycerin suppository PRN
- Reinforce teaching of POC urine ketone testing **OR** POC blood ketone/glucose testing

RD education goals/responsibilities:
- Parents accurately state child's total fluid amount, types of fluid allowed
- Parents verbalize child's calorie levels are set at 75% RDA, adjusted for age/height/BMI/activity
- Parents demonstrate keto diet preparation, including use of scale for foods and fluids, vitamin and mineral supplementation schedule and products
- Give information on OTC meds and hygiene products (i.e. carbohydrate content)
- Review sick day guide and problem solving

DAY 4:
RN education goals/responsibilities:
- Prior to discharge: Parents administer glycerin suppository if no bowel movement since admission

RD education goals/responsibilities:
- Parents verbalize plan to maintain tolerance of the keto diet plan

Other

Safety
(throughout admission):
- Maintain seizure safety sheet
- Net bed as needed
- On day 1: transport equipment (wagon, stroller, wheelchair)

Activity
(throughout admission):
- Developmentally appropriate activities as tolerated

Support
(throughout admission):
- Child and Family Support for diversional activities during procedures

Discharge Criteria:
Parents demonstrate: daily record keeping; meal plans and meal exchanges; appropriate non-carbohydrate meds/supplements/products; problem solving (e.g., ketosis illness, cheating with non-diet foods); phone # for neurology
Appointments: with dietitian at 2 and 4 weeks, then per outpatient pathway; neurology appointment within 4 weeks, at 6 months, then every 4-6 months as needed
Labs/Medications: 1st set of keto profile ordered; prescriptions for medications and supplements provided;
Dietitian approves vitamin and calcium supplement and initiation schedule to parents

CONTACTS: BETH CHATFIELD, RDN | JAMIE CUBANSKI, RN | LILA WORDEN, MD

LAST UPDATED: 06.24.26

Connecticut Children's

CLINICAL PATHWAY:
Ketogenic Diet
Appendix A: Pre-Admission Checklist:

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

One month prior to admission:

MD Responsibilities – Required Work-Up:
- ❑ EEG if >1 year since last study.
- ❑ EKG to be completed prior to admission
- ❑ Serum amino acids, urine organic acids, keto profile, carnitine profile, acylcarnitine profile
- ❑ Height, weight; head circumference for patients ≤3 years old
- ❑ Evaluate need for preventative medication if concurrent zonisamide or topiramate, or if history of kidney stone

Dietitian and Keto RN Responsibilities:
- ❑ Keto screen profile completed by Ketogenic Neurology team in Epic

Registration Responsibilities:
- ❑ Neurology RN to follow CT Children's admission guidelines
- ❑ Schedule date/time for admission to initiate ketogenic diet

One week prior to admission:

MD Responsibilities:
- ❑ Review current anti-convulsant medications
- ❑ Parent(s) verbalize understanding of change to low carbohydrate anti-convulsant regimen for child
- ❑ Convert all medications to low carbohydrate forms
- ❑ Provide weaning schedule for barbiturates and benzodiazepines, if necessary
- ❑ Initiate kidney stone preventative medication if needed: Bicitra (preferred manufacturer Methods or PAI), Effer K or UrocitK. Dosing 1 -2 mEq/kg/day if low risk or 2-3 mEq/kg/day if high risk
- ❑ Parent(s) verbalize understanding of potential need to decrease sedating medications, if necessary

Dietitian and Keto RN Responsibilities:
- ❑ Inform inpatient staff of new ketogenic admission and provide all diet information and menus
- ❑ Parent(s) instructed on low carbohydrate beverages
- ❑ Discuss family support for inpatient stay
- ❑ Parents agree to inpatient ketogenic diet teaching

One day prior to admission:

Dietitian and Keto RN Responsibilities:
- ❑ Dietitian/Keto RN to update Epic problem list to include ketogenic diet
- ❑ Parent(s) restrict all solid foods after evening meal
- ❑ Parent(s) limit fluids to ketogenic friendly, zero calorie, decaf soda, water, or non-herbal decaf tea after evening meal
- ❑ If patient is tube fed: parent(s) to follow instructions by dietitian when to stop feeds and give water
- ❑ Parent(s) give first dose of admission day anti-convulsants in unsweetened applesauce at home, sips of water or via G tube
- ❑ Parent(s) bring Ketogenic scale, appropriate beverages and Ketostix for first day of admission
- ❑ Parents verbalize understanding that child must be afebrile and generally healthy prior to admission

CONTACTS: BETH CHATFIELD, RDN | JAMIE CUBANSKI, RN | LILA WORDEN, MD

LAST UPDATED: 06.24.26