

Ketogenic Diet Inpatient Management Care Guideline (for established Keto patients)



Inclusion Criteria: Any child admitted to the hospital who is currently maintained on the ketogenic diet (oral or enteral).

Every Patient – On Admission

- Confirm dextrose allergy is listed in EHR.
- Notify Neurology Epilepsy Monitoring Unit (EMU) Nurse Practitioner (NP) and Registered Dietician (RD) of admission.
- Review home ketogenic regimen and feeding method.
 - Ask about home baking soda regimen, if applicable, and order the appropriate conversion of sodium bicarbonate oral powder.
- Baseline labs: Comprehensive Metabolic Panel (CMP) and serum ketones (beta-hydroxybutyrate - BHB).
- Neuro assessments and vitals per unit standard; continue seizure precautions and home antiseizure medications (ASMs).
- Pharmacy to confirm keto-compatible formulations.

Assess for Acute Illness

- Decreased oral intake, vomiting, or diarrhea.
- Intercurrent infection or perioperative status.
- Medical complication of ketogenic diet therapy.
- All patients on a ketogenic diet are at risk for hypoglycemia, dehydration and metabolic acidosis especially when sick.

Recommendations / Considerations

- Patients on the ketogenic diet are followed by a multidisciplinary team (Neurology, Registered Dietitian, Pharmacy).
- Maintenance of ketosis is essential for ongoing seizure control.
- Interruption of ketogenic therapy during hospitalization may result in seizure exacerbation.
- **Patients on KD are at increased risk for metabolic acidosis, hypoglycemia, and dehydration, particularly when ill and not tolerating home feeds.**
- Avoid administration of intravenous fluids containing dextrose unless clinically indicated.
- Avoid medication formulation changes without Pharmacy consultation regarding carbohydrate content.

No

Acute
illness or
decreased
intake?

Yes

Stable - Tolerating Home Intake

- Use "Ketogenic Diet Add-On order set."
- Continue home ketogenic diet or formula as tolerated:
 - Oral - Continue modified ketogenic diet at patient's home recipe (Modified Diet order, with ketogenic listed in comments – part of Ketogenic Diet Add-On order set).
 - Enteral - Continue home enteral formula at appropriate keto ratio.
 - *Note that RD will propose specific diet order/recipe details to physician/NP for signature*
- No blood glucose (BG) monitoring required beyond routine unless intake declines.
- Routine reassessment at least every 24h and whenever condition changes.

Acute Illness / Decreased Intake

- Use "Ketogenic Diet Add-On order set."
- Evaluate for keto related medical complications – pancreatitis, kidney stones, severe constipation, drug interactions.
- BG q4h while NPO or with decreased intake; monitor CO₂ if indicated; assess hydration.
- Daily BMP + BHB while NPO/until stable; urine ketones, specific gravity, pH daily.
- Treat acidosis if symptomatic and/or CO₂ < 20 mmol/L: sodium bicarbonate powder 1 mEq/kg/day divided two times a day (BID) or three times a day (TID) (1 mEq = 85 mg).
- Consult: Neurology EMU NP, Nutrition, Child Life, Pharmacy

No

Is patient NPO?

Yes

Continue to Page 2:
Not NPO Pathway

Continue to Page 2:
NPO Pathway

Page
1 of 4

Ketogenic Diet Inpatient Management Care Guideline (for established Keto patients)



Acute Illness / Decreased Intake

Not NPO

- Continue ketogenic diet/formula as tolerated
- If oral intake is reduced, provide:
 - Sugar-free, caffeine-free clear liquids (water, ice chips, diet caffeine-free soda, sugar-free Jello, carbohydrate free broth, Powerade Zero, Sugar-free Pedialyte)
 - Advance to ketogenic meals as tolerated
- If enteral feeds are temporary held, provide:
 - Free water or sugar-free Pedialyte per RD guidance
 - Resume formula as soon as tolerated

NPO

- Notify Registered Dietitian
- Start MIVF: Normal saline with 20 mEq/L K⁺ acetate at 1- 1.5 x MIVF – *no dextrose*
- If NPO ≥ 3 days, including NPO prior to admission:
 - Notify Neurology and RD
 - Switch MIVF to D2.5 (e.g. D2.5NS with K⁺ acetate 20mEq/L at 1-1.5 x MIVF to prevent hypoglycemia, worsening acidosis, and dehydration)
 - Consider initiating TPN
- Advance ketogenic meals/formula as tolerated

Hypoglycemia at any point – BG < 40 mg/dL or symptomatic (diaphoresis, pallor, lethargy)

- If tolerating PO:
 - Give 15mL juice (for infants, give 30mL of expressed human milk/infant formula)
- If NPO:
 - Give D10W 0.25 g/kg IV
- Recheck BG in 30 minutes, if still low – continue process until BG ≥ 50 mg/dL

Target Goals

- Blood glucose: 50 – 80 mg/dL
- Urine specific gravity: 1.010 – 1.020
- Urine pH: 6 – 8
- Serum ketones (BHB): 40 – 80 mg/dL
- CO₂ > 20 mmol/L

Discharge Criteria

- Tolerating baseline ketogenic diet/feeding regimen.
- Normoglycemia (> 50 mg/dL) maintained for ≥ 12 hours.
- No ongoing metabolic acidosis requiring intervention
- Reinforced importance of home monitoring

Patient / Family Education

- Reinforce current home monitoring and sick day plan

References

- Bergqvist, A. G. C., Schall, J. I., Gallagher, P. R., Cnaan, A., & Stallings, V. A. (2005). Fasting versus gradual initiation of the ketogenic diet: A prospective, randomized clinical trial of efficacy. *Epilepsia*, 46(11), 1810–1819. <https://doi.org/10.1111/j.1528-1167.2005.00282.x> (Level II)
- Bough, K. J., & Rho, J. M. (2007). Anticonvulsant mechanisms of the ketogenic diet. *Epilepsia (Series 4)*, 48(1), 43–58. <https://doi.org/10.1111/j.1528-1167.2007.00915.x> (Level V)
- Freeman, J. M., Kossoff, E. H., & Hartman, A. L. (2007). The ketogenic diet: One decade later. *Pediatrics*, 119(3), 535–543. <https://doi.org/10.1542/peds.2006-2447> (Level V)
- Hartman, A. L., & Vining, E. P. G. (2007). Clinical aspects of the ketogenic diet. *Epilepsia*, 48(1), 31–42. <https://doi.org/10.1111/j.1528-1167.2007.00914.x> (Level V)
- Henderson, C. B., Filloux, F. M., Alder, S. C., Lyon, J. L., & Caplin, D. A. (2006). Efficacy of the ketogenic diet as a treatment option for epilepsy: Meta-analysis. *Journal of Child Neurology*, 21(3), 193–198. <https://doi.org/10.2310/7010.2006.00044> (Level III)
- Kang, H. C., Chung, D. E., Kim, D. W., & Kim, H. D. (2004). Early- and late-onset complications of the ketogenic diet for intractable epilepsy. *Epilepsia*, 45(9), 1116–1123. <https://doi.org/10.1111/j.0013-9580.2004.10004.x> (Level IV)
- Kossoff, E. H. (2008). International consensus statement on clinical implementation of the ketogenic diet: Agreement, flexibility, and controversy. *Epilepsia*, 49 Suppl 8, 11–13. <https://doi.org/10.1111/j.1528-1167.2008.01823.x> (Level V)
- Kossoff, E. H., Laux, L. C., Blackford, R., Morrison, P. F., Pyzik, P. L., Hamdy, R. M., Turner, Z., & Nordli, D. R., Jr. (2008). When do seizures usually improve with the ketogenic diet? *Epilepsia*, 49(2), 329–333. <https://doi.org/10.1111/j.1528-1167.2007.01417.x> (Level IV)
- Kossoff, E. H., Zupec-Kania, B. A., Auvin, S., Ballaban-Gil, K. R., Christina Bergqvist, A. G., Blackford, R., Buchhalter, J. R., Caraballo, R. H., Cross, J. H., Dahlin, M. G., Donner, E. J., Guzel, O., Jehle, R. S., Klepper, J., Kang, H.-C., Lambrechts, D. A., Liu, Y. M. C., Nathan, J. K., Nordli, D. R., Jr, ... Wirrell, E. C. (2018). Optimal clinical management of children receiving dietary therapies for epilepsy: Updated recommendations of the International Ketogenic Diet Study Group. *Epilepsia Open*, 3(2), 175–192. <https://doi.org/10.1002/epi4.12225> (Level V)
- Kossoff, E. H., Zupec-Kania, B. A., & Rho, J. M. (2009). Ketogenic diets: an update for child neurologists. *Journal of Child Neurology*, 24(8), 979–988. <https://doi.org/10.1177/0883073809337162> (Level V)
- Lefevre, F., & Aronson, N. (2000). Ketogenic diet for the treatment of refractory epilepsy in children: A systematic review of efficacy. *Pediatrics*, 105(4), E46. <https://doi.org/10.1542/peds.105.4.e46> (Level III)

Ketogenic Diet Inpatient Management Care Guideline (for established Keto patients)



- Mady, M. A., Kossoff, E. H., McGregor, A. L., Wheless, J. W., Pyzik, P. L., & Freeman, J. M. (2003). The ketogenic diet: Adolescents can do it, too. *Epilepsia (Series 4)*, 44(6), 847–851. <https://doi.org/10.1046/j.1528-1157.2003.57002.x> (Level IV)
- Pinto, A. L., Montenegro, M. A., Valente, K., & Sampaio, L. B. (2024). Ketogenic diet therapy for epilepsy: Clinical pearls. *Epilepsy & Behavior*, 161. <https://doi.org/10.1016/j.yebeh.2024.110091> (Level V)
- Shaaban, S., Al-Beltagi, M., El Rashidy, O., Nassar, M., & El Gendy, Y.. (2023). Ketogenic diet in childhood epilepsy: Clinical algorithm in a tertiary care center. *Frontiers in Pediatrics*, 11. <https://doi.org/10.3389/fped.2023.1221781> (Level V)
- Schoeler, N. E., Whiteley, V. J., Guglielmetti, M., Neri, L. de C. L., Blackford, R., Tan-Smith, C., Aylward, N., Barwick, K., Caballero, M. E., Gudej-Rosa, S., Huang, W.-L., Johnson, M., Keow, C. O. B., Madsen, S., Megaw, K., Njobvu, T. N., Pfeifer, H., Phillips, S., & van der Louw, E. (2025). Classical and modified ketogenic diets for children and young people with drug-resistant epilepsy: A reflection of international dietetic practice and best practice recommendations for dietitians. *Journal of Human Nutrition and Dietetics : The Official Journal of the British Dietetic Association*, 38(5), e70129. <https://doi.org/10.1111/jhn.70129> (Level V)
- The Charlie Foundation. *The Charlie Foundation for Ketogenic Therapies*, <https://charliefoundation.org/>. Accessed 29 Apr. 2026. (Level V)
- Zupac-Kania, B., & Zupanc, M. L. (2008). Long-term management of the ketogenic diet: Seizure monitoring, nutrition, and supplementation. *Epilepsia*, 49 Suppl 8, 23–26. <https://doi.org/10.1111/j.1528-1167.2008.01827.x> (Level V)