Nutritional Rehabilitation Protocol for Patients with Weight Loss, Malnutrition, and Eating Disorders

Criteria for admission - patient's condition demonstrates <u>any</u> of the following: *Severe electrolyte abnormalities; cardiac arrhythmias including prolonged QT interval; hemodynamic instability including HR < 50 bpm; blood pressure <90/60 or with significant orthostatic changes (>20 beats/minutes when stands up or 10 mm decrease in systolic BP); renal compromise; hepatic compromise; patient eating < 500 cal/day for last 3 days (acute food refusal); ketosis; severe malnutrition (<75% median BMI, BMI z-score ≤ -3; loss of >10% of typical body weight; deceleration across 3 Z-score lines; intake of ≤ 75% of estimated caloric needs)*

Criteria for discharge - patient must demonstrate <u>all</u> of the following: *Corrected electrolyte abnormalities; off electrolyte supplementation for 24 hours; No longer at risk for Refeeding Syndrome; no pre-syncope with orthostatics; normal blood pressures, including with orthostatics.*
HR>45 overnight x48 hours; HR>50 during the day x48 hours. Heart Rate discharge goals to be discussed with Adolescent medicine and Hospitalist teams and adjustments to discharge criteria will be considered on a case by case basis.
Anticipated Length of Stay: *6-14 days*

INPATIENT PATHWAY

CARE MGMT	ADMISSION DAY	DAY 1	DAY 2 +	BEFORE DISCHARGE	DAY OF DISCHARGE
NURSING	• Obtain nursing database and contact the nutritionist on call • Admission weight – void, then have patient change into gown, and perform blinded weight. Record scale # in Epic • Vital signs on admission and every four hours • Telemetry, continuous • Strict intake and output	• Daily Assessment • Vital signs every 4 hours • Telemetry, continuous • Strict intake and output • Orthostatics QAM prior to breakfast (check HR and BP after 5 minutes supine and then after 2 minutes of standing). Note if symptomatic in Epic • Weight before breakfast, after orthostatics. Have patient void, then change into gown. Obtain blinded weight. Record scale # in Epic	• Same as previous, except vital signs every 4 hours		
LABORATORY / DIAGNOSTIC MONITORING	• CMP, Magnesium, Phosphorous, Vitamin D, Methylmalonic Acid, CBC, Ferritin, Iron profile, ESR, Celiac Panel, LH, FSH, Estradiol/Testosterone, Prolactin, TSH with reflex to Free T4, Urinalysis, ECG.	• BMP, Magnesium Phosphorous QAM (6 am draw) • Consider BID labs on an individual basis ->These are THE ONLY LABS NEEDED. Do NOT need DHEAS, 17OH Progesterone	• BMP, Magnesium Phosphorous QAM (6 am draw) • Consider BID labs on an individual basis	• BMP, Magnesium Phosphorous QAM (6 am draw) – at least first 5 completed days of refeeding and while increasing calories • Consider BID labs on an individual basis	

Nutritional Rehabilitation

MEDICATION

- Complete medication reconciliation
- Non-formulary medications from home ordered to continue in hospital should be brought to pharmacy for verification
- Order medications on admission as appropriate:

Multivitamin with minerals (chewable pediatric MVI)		
Age: All ages	Dose: One Tablet (can crush if needed)	Discharge Plan: Parents to obtain OTC MVI with Minerals and with Zinc (Flinstone Complete)
Thiamine (supplement for 4 weeks total)		
Weight: <40 kg >40 kg	Dose: 50 mg PO/day 100 mg PO/day	
Zinc (supplement for 4 weeks total)		
Suspension: Zinc Sulfate 44mg/mL (10mg elemental zinc/mL) **Capsule: Zinc sulfate capsule 220mg (50mg elemental)* Weight: <25 kg ≥ 25 - 39.9 kg >40 kg *Capsule preferred, ok to round up.	 Dose: Daily dosing 2 mL suspension (20 mg elemental Zinc) 3 mL suspension OR Capsule x1 Capsule x1 (50 mg elemental Zinc) or 5mL	 Discharge Plan: Directions: One tablet Daily < 25kg : No additional Zinc supplementation ≥ 25 - 39.9 kg: Zinc sulfate capsule Q Other Day >40 kg: Zinc sulfate capsule Daily

Zinc sulfate suspension difficult to obtain from outside pharmacies. See above Discharge Plan recs for home Zinc supplements.

- If ferritin low, or TIBC elevated - start Ferrous sulfate 325 mg daily – BID
- If MMA elevated, indicative of vitamin B12 deficiency – start PO 250 mcg cyanocobalamin daily
- Vitamin D Supplementation indicated if < 30 mg/mL - > 12 year of age: supplement 2000-5000 units/day or as per RD recommendation

NUTRITION / HYDRATION

• Start protocol at 2000 calories daily if possible based on timing of admission • Refer to RD for recommendations for goal calories • No snack/meal substitutions allowed	• If not started on day of admission, start at 2000 calories daily • Refer to RD for recommendations for goal calories • Refer to RD for recommendations for fluid minimum and maximum • No snack/meal substitutions allowed	• Advance by 200-400 calories daily as per RD • Refer to RD for recommendations for fluid minimum and maximum • No snack/meal substitutions allowed	• Advance 300-400 calories daily as per RD • Refer to RD for recommendations for fluid minimum and maximum • No snack/meal substitutions allowed	• Plan to increase by 400 calories at discharge • No snack/meal substitutions allowed

REE Equation		**Calorie Goal Equation**	
Age	Males	Age	
3 – 10 y	(22.7 × wt [kg]) + 495	< 12 y	REE x 2-3
10 – 18 y	(17.5 × wt [kg]) + 651	≥ 12 y	REE x 2.5-3.5

PATIENT / FAMILY EDUCATION

• Give and explain patient/ family pathway and meals handout	• Continues to provide education to patient and family • Reinforce guidelines, rules	• Continues to provide education to patient and family • Reinforce guidelines, rules	• Continues to provide education to patient and family • Reinforce guidelines, rules	• Continues to provide education to patient and family • Reinforce guidelines, rules

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PATIENT / FAMILY EDUCATION			• Psychology F/U regarding illness, treatment options, etc.		• Discharge teaching
CONSULTS / FAMILY MEETINGS	• Adolescent Medicine • Psych • Dietician	• Child Life • Social Work • Adolescent Medicine F/U	• Child Life • Adolescent Medicine F/U • Psych F/U	• Multidisciplinary family meeting • Dietician teaching for parents only	
SAFETY / ACTIVITY	• Bed rest with bathroom privileges • For all meals and snacks: patient to be out of bed, sitting in chair, and in a gown. • Patient is not permitted to use bathroom during meals, snacks, and rest periods • RN or nurse assistant monitors at all meals • Bathroom door open, RN or nurse assistant present; no flushing, no turning on faucet • Seated 10-minute shower, after am vitals, and prior to breakfast. Door must remain partially open. Supervision during the shower at discretion of the team • Patient is not to be told their weight/calorie count unless delivered by the team • Patient is not permitted to leave the unit except for supervised Child Life/Art Therapy/Music Therapy activities • Patient may attend Art and Music Therapy if approved for wheelchair rides/or walks (counts as a ride/walk) • Patient is not permitted to receive food or chewing gum from family or visitors • No visitors (other than parent/caregiver) or phone calls allowed at meal/snack time and rest time. • Patient may listen to music during mealtime. • Patient is not permitted to walk to or loiter at nurses' station • Patient is not given the opportunity to read her/his chart, including the calorie count form • Patient is not allowed to access content (via TV, internet, etc.) about fashion, food, exercise, weight or nutrition • Additional sitter if ordered		Same as previous days EXCEPT • Parent may replace RN or nurse assistant during meals and snacks if approved by team. Parent participation is encouraged starting Day 2 of treatment (when parent/patient relationship is therapeutic). • At the discretion of the team, add one wheelchair ride. Then, advance gradually to 3 wheelchair rides. When approved by team, transition gradually to three 10-minute walks daily.		
PATIENT MEAL TIME	**Meal preparation**: • RN or nurse assistant prepares tray (parent may assist with meal selection later during hospital stay after teaching from RD, if approved) • Meals are limited to 30 minutes and snacks to 15 minutes. • All food with calories on the package must come out of the package • Menu must be taken off the tray before being served to patient • Check calories to ensure they add up correctly • If food is missing, contact dietitian or diet office to obtain adequate replacement				

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PATIENT MEAL TIME	• If the condiment does not need to be consumed (ketchup, mustard, salt, pepper) it will be marked "FREE" and it is the patient's choice to consume it or not. All other condiments (dressing, mayo, salsa) must be consumed. • RN, nurse assistant, or parent supervising meal may not leave the room until the meal and rest period is finished • Parents/primary caregivers are encouraged to participate in meal and rest period supervision early & throughout the admission if the team feels the relationship is therapeutic **End of Meal:** • After 30 minutes (15 for snack), RN or nurse assistant will remove any unfinished foods • The amount of uneaten food is replaced with supplement, using the menu's calorie list as a guide • Patient has 15 minutes to drink the supplement. If the patient does not drink the supplement, the resident and attending physician are notified • Give the remaining supplement via ng tube. Bolus feed unless otherwise specified by team • Remove ng tube after each feeding unless directed otherwise by team • If the patient vomits a meal, the calories will be replaced after the attending physician is consulted **Documentation:** • RN will record the food, the amount given, and amount eaten and place it in the patient's chart • DO NOT keep the Calorie Count sheets in the patient's room • RN will record the amount of supplement replacement given and the route (PO or NGT) on the patients' flow sheet • If team member is concerned about parent behavior during meals, notify team and make recommendations to limit parent involvement if necessary				
REST PERIODS	**Rest periods** start immediately after the patient completes a meal or snack • **Rest periods are 60 minutes for patients with anorexia (including purging anorexia).** Rest period of 90 minutes needed for patients with diagnosis of Bulimia. • Patient is not allowed to go to bathroom, brush teeth or wash hands • Patient may be given a damp cloth to clean hands or a bedpan if needed while she/he is in bed • No visitors are allowed during rest periods with the exception of parents/primary caregiver • Patient may watch TV, listen to music or do quiet activities in bed (e.g. reading or writing)				
D / C PLANNING-CLINICAL RESOURCE MANAGEMENT		• Identify payer source • Identify case management interventions	• Review psych consult for recommendations. • If pursuing FBT, discuss follow-up care with team • If inpatient/PHP care recommended, d/w team for appropriate facility referrals Initiate any inpatient referral	• Family meeting with attending of record, adolescent med, RD, social work, and psych • Psychologist to review Home Protocol with patient, if appropriate • Dieticians will provide teaching/recommendations to parents only	• Increase calorie goal by 400 calories once at home • Discontinue planned walks once at home • If appropriate, facilitate transfer to other facility, including transport • Continue to facilitate transition of care as appropriate