**Stop and Review**

**Inclusion Criteria**
- 5-17 years (if ≥18, call ADO Med and Psych re: consent issues that may preclude admission)
- Concern for eating disorder (Anorexia nervosa, avoidant restrictive food intake disorder, eating disorder unspecified, Bulimia nervosa)

**Exclusion Criteria**
- Other diagnosis resulting in severe malnutrition that is NOT an eating disorder (e.g. cystic fibrosis, IBD)
- ≥18 years with refusal to consent to refeeding & NG tube or ≥ 21 years old

**Eating Disorders - Refeeding Care**

- ED
- Inpatient
- PBMU: Medical Service (MBB)
- PBMU: Psychiatry Service

**Appendix**

**Version Changes**
**Approval & Citation**
**Evidence Ratings**
**Bibliography**
Eating Disorder- Refeeding Pathway v3.0: Emergency Department

Inclusion Criteria
- 5-17 years (if ≥18, call ADO Med and Psych re: consent issues that may preclude admission)
- Concern for eating disorder (Anorexia nervosa, avoidant restrictive food intake disorder, eating disorder unspecified, Bulimia nervosa)

Exclusion Criteria
- Other diagnosis resulting in severe malnutrition that is NOT an eating disorder (e.g. cystic fibrosis, IBD)
- ≥18 years with refusal to consent to refeeding & NG tube or ≥ 21 years old

Evaluation/initial therapies
- Vital signs, orthostatics, weight (after void), height, cardiorespiratory monitor
- Enter weight & height in EHR to obtain BMI and z-score
- Labs: Electrolytes, BUN, Creatinine, Phos, Mg, Ca, ALT, CBC, TSH, UA, urine preg
- IVF bolus if needed (start with 10mL/kg and then re-evaluate if 2nd bolus is needed)
- Correct electrolytes at same time/prior to refeeding
- EKG (if not done already)

Admission criteria
Admit if one or more of the following:
- Electrolyte disturbance (e.g. hypokalemia, hyponatremia, hypophosphatemia)
- EKG abnormalities (e.g. prolonged QTc males>450ms/females>470ms or severe bradycardia)
- Physiologic instability unresolved after management in ED
- Severe bradycardia (HR<45 BPM)
  - Hypotension MAP ≤57
  - Hypothermia (Temp <96F or 35.6C)
- Symptomatic orthostasis (systolic BP decrease >20mmHg systolic, or diastolic BP decrease >10mmHg), despite adequate fluid resuscitation
- Acute medical complications of malnutrition (e.g. syncope, seizures, cardiac failure, pancreatitis)

After work-up complete:
- Call Adolescent Med (ADO) on-call if plan to admit or other questions
- Provide meal or oral supplement (Boost Plus if ≥ 11yr, or BKE 1.5 if <11yr).

Prior to leaving ED
- Admit to Inpatient: Abnormal EKG or HR <30 BPM requires telemetry
- Add Blind Weight Flag in EPIC
- Provider, RN, or PMH reviews Restoring Nutrition-Refeeding (PE643) with family.

Stop and Review

Psychiatry admission
- Consider PBMU admit if patient does not meet criteria for med admit AND patient is not safe to receive treatment at an eating disorder residential center (suicidality, elopement, eating disorder behaviors that may require restraint).
- Contact MHE as indicated.

Discharge Instructions
- Follow-up with PCP within one week of discharge and weekly thereafter for blind weight and vital signs.
- Provide family with Return to Activity Guidelines

If new patient:
- Recommend referral to ADO Med Clinic; PCP to place referral.
- Follow-up with established outpatient team (Mental Health Therapists, Medical Providers, Dietitian) as soon as possible.

If followed by SCH ADO Med:
- Recommend appointments with medical provider and RD in 2-3 weeks. See PCP weekly until available.
- Follow-up with mental health provider as soon as possible.
Eating Disorder- Refeeding Pathway v3.0: Inpatient

**Inclusion Criteria**
- 5-17 years (if ≥18, call ADO Med and Psych re: consent issues that may preclude admission)
- Concern for eating disorder (Anorexia nervosa, avoidant restrictive food intake disorder, eating disorder unspecified, Bulimia nervosa)

**Exclusion Criteria**
- Other diagnosis resulting in severe malnutrition that is NOT an eating disorder (e.g. cystic fibrosis, IBD)
- ≥18 years with refusal to consent to refeeding & NG tube or ≥ 21 years old

**Therapy or Assessment**

**Admit**
- Medical Team
- Initiate Medical Stabilization Eating Disorder orders
- Add Blind Weight Flag in EPIC
- Provide family with Restoring Nutrition-Refeeding (PE 643) and describe feeding protocol

**Vitals**
- Continuous cardiorespiratory monitoring; vitals q 4 hours
- Abnormal EKG or HR<30 BPM requires telemetry

**Activity**
- Bedrest with bathroom privileges; avoid excess movement
- Wear long sleeves/long pants/socks/under covers
- Recommend bathroom restriction 60 minutes after all meals/snacks
- Showers 5 minutes; use shower stool due to fall risk

**Refeeding**
- Monitor for refeeding syndrome
- Initiate refeeding protocol at 1200 kcal per day until assessed by Dietitian
- Correct electrolytes at same time/prior to refeeding
- Proceed with NG tube placement with FIRST incomplete meal, snack, or water AND incomplete oral supplement
- Call Support Nurse if needed

**Nursing**
- Follow GOC: Eating Disorders and Refeeding Labs
- On admit check electrolytes/BUN/creatinine/Phos/Mg/Ca/ALT/CBC/TSH/UA/urine preg / EKG (if not already done)
- Check electrolytes, Ca, Mg, Phos daily for *reefing day #1-5 then Mon/Thurs
  *Refeeding day #1 = 24 hours after completion of 100% prescribed nutrition

**Consults** (to facilitate consistent messaging)
- Consult Adolescent Medicine, Dietitian, Psychiatry C&L within 24 hours

**Education**
- Provide family with info about Meal Support Classes
- Family Care Conference Monday or Thursday
- Total length of hospital stay averages 2-3 weeks for safe refeeding, to be determined by interdisciplinary team

**Discharge Criteria**
- Resolution of physiologic instability (daytime HR > 90 (required) and nighttime HR>45 (recommended), EKG changes, symptomatic orthostasis
- All electrolyte abnormalities corrected (no longer on supplements)
- Low risk for refeeding syndrome (highest risk in first 2 weeks of refeeding)
- Eating all prescribed nutrition in the form of solid food (recommended)
- Complete education and care coordination

**Discharge Instructions**
- Follow-up with PCP within one week of discharge and weekly thereafter for blind weight and vital signs.
- Provide family with Return to Activity Guidelines
- If new patient:
  - Recommend referral to ADO Med Clinic
  - Follow-up with established outpatient team (Mental Health Therapists, Medical Providers, Dietitian) as soon as possible.
- If followed by SCH ADO Med:
  - Recommend appointments with medical provider and RD in 2-3 weeks. See PCP weekly until available.
  - Follow-up with mental health provider as soon as possible

**Provider Job Aid for Difficult Conversations**

**PBMU transfer**
- Can consider transfer to MBB, if eating disorder behaviors or co-occurring psychiatric symptoms where the patient is worsening psychiatrically or failing to stabilize nutritionally on the Medical Unit
- Contact Psych Consult and Liaison
## Inclusion Criteria
- Concern for eating disorder (Anorexia nervosa, avoidant restrictive food intake disorder, eating disorder unspecified, Bulimia nervosa)

## Exclusion Criteria
- Other diagnosis resulting in severe malnutrition that is NOT an eating disorder (e.g. cystic fibrosis, IBD)
- ≥ 18 years old

### MBB Psychiatry admit and/or transfer
- Admit
  - Page Psychiatry C&L Team to coordinate timing with PBMU & arrange review of roadmap with patient and family (no tours)
  - Use orderset: Eating Disorder-Refeeding admission including PBMU orders
  - Add Blind Weight Flag in Epic
  - Medical team continues to be primary team, same consultant teams (ADO, Psych, Nutrition), same interdisciplinary meeting
  - Provide family with Restoring Nutrition-Refeeding (PE 643)

### Activity and Nursing
- Per patient recovery level, see GOC: Eating Disorders and Refeeding

### Labs
- On admit check electrolytes/BUN/creatinine/Phos/Mg/Ca/ALT/CBC/TSH/UA/urine preg / EKG (if not already done)
- Check electrolytes, Ca, Mg, Phos daily for **reefing day 1-5 then Mon/Thurs
- Refeeding day #1 = 24 hours after completion of 100% prescribed nutrition

### Consults (to facilitate consistent messaging)
- Consult Adolescent Medicine, Dietitian, Psychiatry C&L within 24 hours (if not already done)

### Education
- Orientation to PBMU
- Provide family with info about Meal Support Classes
- Total length of hospital stay to be determined by interdisciplinary team. Average length of stay 2-3 weeks for safe refeeding.

### Criteria for Admit to PBMU eating disorder program
- Less than 80% treatment goal weight
- Severity of disorder/malnutrition makes outpatient success unlikely
- Unable to complete meals and snacks without oral supplement
- Reliance on feeding tube

### Discharge Criteria
- Resolution of physiologic instability (daytime HR >50 (required) and nighttime HR>45 (recommended), EKG changes, symptomatic orthostasis
- All electrolyte abnormalities corrected (no longer on supplements)
- Low risk for refeeding syndrome (highest risk in first 2 weeks of refeeding)
- Eating all prescribed nutrition in the form of solid food (recommended)
- Complete education and care coordination

### Discharge Instructions
- Follow-up with PCP within one week of discharge and weekly thereafter for blind weight and vital signs.
- Provide family with Return to Activity Guidelines

### If new patient:
- Recommend referral to ADO Med Clinic; PCP to place referral.
- Follow-up with established outpatient team (Mental Health Therapists, Medical Providers, Dietitian) as soon as possible.

### If followed by SCH ADO Med:
- Recommend appointments with medical provider and RD in 2-3 weeks. See PCP weekly until available.
- Follow-up with mental health provider as soon as possible

---

**Stop and Review**

**Provider Job Aid for Difficult Conversations**

**Last Updated: January 2021**

**Next Expected Review: April 2022**

For questions concerning this pathway, contact: EatingDisorderRefeedingPathway@seattlechildrens.org

If you are a patient with questions contact your medical provider, Medical Disclaimer
Admit to PBMU Eating Disorder Program

Admit
- Psychiatry team
- If admitting from residential programs, please see this guidance
- Use orderset: Eating Disorder-Refeeding admission including PBMU orders
- Add Blind Weight Flag in EPIC
- Change recovery level to match clinical status, see GOC: Eating Disorders and Refeeding
- Medically stable including HR >45
- Provide family with Restoring Nutrition-Refeeding (PE 643) and describe feeding protocol
- Vitals
- Vital signs once daily with orthostatic
- Cardiorespiratory monitoring per GOC: Eating Disorders and Refeeding

Refeeding
- Monitor for refeeding syndrome
- Continue calorie level from medical admission
- If new patient, initiate refeeding protocol at 1200 kcal per day until assessed by Dietitian
- Correct electrolytes at same time/prior to refeeding
- Proceed with NG tube placement with FIRST incomplete meal, snack, or water AND incomplete oral supplement

Activity and Nursing
- Per patient recovery level, see GOC: Eating Disorders and Refeeding
- Labs
- On admit check electrolytes/BUN/creatinine/Phos/Mg/Ca/ALT/CBC/TSH/UA/urine preg / EKG (if not already done)
- Check electrolytes, Ca, Mg, Phos daily for **refeeding day 1-5 then Mon/Thurs
*Refeeding day #1 = 24 hours after completion of 100% prescribed nutrition
- Consults (to facilitate consistent messaging)
  - Consult Adolescent Medicine & Dietitian
  - Family Care Conference Monday or Thursday

Education
- Orientation to PBMU
- Provide family with info about Meal Support Classes
- Total length of hospital stay to be determined by interdisciplinary team. Average length of stay 2-3 weeks for safe refeeding.

Evaluate for discharge

Discharge Criteria
- Resolution of imminent safety risks
- Achieved medical stabilization
- Eating all prescribed nutrition in the form of solid food (recommended)
- Ability for less restrictive treatments to be safe options
- May be triggered by insurance and utilization reviews
- Complete education and care coordination

Discharge Instructions
- Follow-up with PCP within one week of discharge and weekly thereafter for blind weight and vital signs.
- Provide family with Return to Activity Guidelines
  - If new patient:
    - Recommend referral to ADO Med Clinic; PCP to place referral.
    - Follow-up with established outpatient team (Mental Health Therapists, Medical Providers, Dietitian) as soon as possible.
  - If followed by SCH ADO Med:
    - Recommend appointments with medical provider and RD in 2-3 weeks. See PCP weekly until available.
    - Follow-up with mental health provider as soon as possible

Last Updated: January 2021
Next Expected Review: April 2022

For questions concerning this pathway, contact: EatingDisorderRefeedingPathway@seattlechildrens.org
If you are a patient with questions contact your medical provider, Medical Disclaimer

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Refeeding Syndrome

Who is high risk for refeeding syndrome? (adapted from NICE guidelines)
1. Patient has at least one of the following:
   - BMI z-score < -2
   - Weight loss ≥ 10% usual body weight in last 3-6 months
   - Little or no nutritional intake for >10 days
   - Low levels of potassium, phosphate, magnesium before re-feeding
2. Patient has two or more of the following:
   - BMI z-score = -1 to -1.9
   - Weight loss ≥ 7.5% usual body weight in last 3-6 months
   - Little or no nutritional intake for >5 days
3. BMI < 70% mBMI (mBMI = BMI at 50% percentile for age & gender)
4. Abnormal EKG or HR<30 BPM requires telemetry bed
5. Acute medical complications of malnutrition (e.g. syncope, seizures, cardiac failure, pancreatitis, severe electrolyte disturbance)
6. Clinical concern for medical acuity that requires higher level of medical monitoring

What is Refeeding Syndrome?
- A potentially life-threatening complication in the first 2-3 weeks of refeeding; patients may appear deceptively well.
- Body cannot tolerate the amount of nutrition consumed
- Hallmark is hypophosphatemia: occurs when carbohydrates trigger release of insulin; insulin drives phosphate and other electrolytes into depleted cells
- Risk of RFS present in most patients with severe malnutrition.
- Highest risk if very low body weight, rapid weight loss, minimal intake over past 5-10 days regardless of body weight, and electrolyte abnormality prior to refeeding (replete electrolytes at same time or prior to refeeding).

Additional reading: O'Connor 2013, Junior MARSIPAN 2012
Medical Unit Family Care Conferences for Patients on Refeeding Protocol

**Goal:** To improve family engagement and satisfaction by addressing their concerns and aligning treatment expectations

**Attendees:** Conferences designed to be led by a team member from the primary General Medical service, in addition to specialty consultants from Psychiatry, Nutrition, Adolescent Medicine

**Suggested Format:**
- Introductions and brief description of clinical roles of team members
- Elicit parental concerns & questions (which may be answered below; if not address at end)
- Review reason for admission, current status, and hospitalization roadmap utilizing Restoring Nutrition – Refeeding PE643 Document
- Update & establish plan of care from each discipline:
  - **Gen Med:** Address parental concerns & questions if not yet answered; identify discharge goals and potential barriers;
  - **Psychiatry:** Discuss diagnostic conceptualization, comorbidities, and currently recommended treatments (FBT, residential, etc)
    - Discuss importance of familial participation during stay: Parent Meal Support Class, PsychoEd Modules, practicing meal support, +/- PBMU Parent Discussion Groups
  - **Ado Med:** Discuss medical risks of starvation, refeeding approach, potential complications and monitoring
  - **Nutrition:** Discuss nutritional needs and refeeding plan
- Review disposition planning needs (if indicated)
- Further Questions? (may need to follow-up after conference)
Inpatient Discharge

Inpatient Discharge Criteria and Follow-Up From Medical Floor or Medical-Behavioral Bed

Discharge Criteria

- Resolution of physiologic instability (daytime bradycardia HR>50 (required) and night-time HR>45 (recommended), EKG changes, symptomatic orthostasis)
- All electrolyte abnormalities corrected (no longer on supplements)
- Low risk for refeeding syndrome (highest risk first 2 weeks of refeeding)
- Eating all prescribed nutrition in the form of solid food (recommended)

All appointments scheduled below:

- Schedule new visit or follow-up visit with Adolescent Medicine Provider and RD in 2-3 weeks of discharge (if appt unavailable follow-up with PCP weekly until seen by Adolescent Medicine)
- Schedule new visit or follow-up visit with Adolescent Dietitian within 2 weeks of discharge
- Schedule new visit for follow-up visit with eating disorder mental health specialists as soon as possible

Education

- Complete hospitalization discharge checklist prior to discharge:
  - Nutrition Education Session 1 and 2 (Dietician)
  - Psychiatric Education (Psych team)
  - Medical Complications Education (Adolescent Medicine team)
  - Parents must attend Meal Support Class (Psych team) and provide meal support for at least 2 meals/snacks
- Provide family with Return to Activity Guidelines
Admits from Residential Eating Disorder Programs

Patients admitting from Eating Recovery Center (ERC) or other residential eating disorder program:

Note: these patients may be referred for admission due to suicidal ideation and are assessed for admission by the Mental Health Evaluator in the Emergency Department. If admitted to PBMU, they need elements of the ED-Refeeding pathway but they are generally weight-restored and do not require refeeding. In general they require clear behavioral support to maintain nutrition, and as such receive all nursing interventions pre-checked in the Nursing and PBMU orders section of the plan as well as the following:

a. **EKG:** Order EKG if not done in the ED
b. **Labs:** Order AM admission labs and refeeding labs if not already done in ED
c. **Diet:** Modified diet at the kcal level provided by ERC RD; this information will be emailed to the PBMU LOC and the Child Psychiatry Consultation Case Manager
Summary of Version Changes

- **Version 1.0 (4/12/2017):** Go live.
- **Version 2.0 (5/24/2017):** Clarified Admit Criteria and High Risk Criteria; added Refeeding Syndrome definition; added Family Care Conference description; added instruction on how to view %mBMI.
- **Version 2.1 (9/20/2017):** Added action for PMHS2/ED2 to provide Restoring Nutrition (PE643) handout to patient and answer questions prior to leaving the ED. Contact information and backup resources also provided.
- **Version 2.2 (5/30/2018):** Refined Admit Criteria.
- **Version 2.3 (7/29/2019):** Changed email address and added email disclaimer to page footers
- **Version 3.0 (1/28/2021):** Modified the algorithm to reflect current workflow and patient placement on the Medical Unit due to COVID-19. In addition to, migrating the content to the new CSW algorithm template.
Approval & Citation

Approved by the CSW Eating Disorder - Refeeding Pathway team for April 12, 2017, go-live

CSW Eating Disorder - Refeeding Pathway Team:

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CIS Informatician: Carlos Villavicencio, MD, MMI
CIS Analyst: Heather Marshall
Librarian: Sue Groshong, MLIS
Program Coordinator: Kristyn Simmons

Clinical Effectiveness Leadership:

Medical Director: Darren Migita, MD
Operations Director: Karen Rancich Demmert, B.S, M.A.


Please cite as:
Evidence Ratings

This pathway was developed through local consensus based on published evidence and expert opinion as part of Clinical Standard Work at Seattle Children’s. Pathway teams include representatives from Medical, Subspecialty, and/or Surgical Services, Nursing, Pharmacy, Clinical Effectiveness, and other services as appropriate.

When possible, we used the GRADE method of rating evidence quality. Evidence is first assessed as to whether it is from randomized trial or cohort studies. The rating is then adjusted in the following manner (from: Guyatt G et al. J Clin Epidemiol. 2011;4:383-94, Hultcrantz M et al. J Clin Epidemiol. 2017;87:4-13.):

Quality ratings are *downgraded* if studies:
- Have serious limitations
- Have inconsistent results
- If evidence does not directly address clinical questions
- If estimates are imprecise OR
- If it is felt that there is substantial publication bias

Quality ratings are *upgraded* if it is felt that:
- The effect size is large
- If studies are designed in a way that confounding would likely underreport the magnitude of the effect OR
- If a dose-response gradient is evident

**Certainty of Evidence**
- ⭐️⭐️⭐️⭐️ High: The authors have a lot of confidence that the true effect is similar to the estimated effect
- ⭐️⭐️⭐️ Moderate: The authors believe that the true effect is probably close to the estimated effect
- ⭐️⭐️ Low: The true effect might be markedly different from the estimated effect
- ⭐️⭐️⭐️ Very low: The true effect is probably markedly different from the estimated effect

Guideline: Recommendation is from a published guideline that used methodology deemed acceptable by the team
Expert Opinion: Based on available evidence that does not meet GRADE criteria (for example, case-control studies)
Literature Search Methods

Studies were identified by searching electronic databases using search strategies developed and executed by a medical librarian, Susan Groshong. An initial search was performed in March and April, 2015. The following databases were searched—on the Ovid platform: Medline, PsycINFO and Cochrane Database of Systematic Reviews; elsewhere: Embase, CINAHL, Clinical Evidence, National Guideline Clearinghouse, TRIP and Cincinnati Children’s Evidence-Based Recommendations. In Medline, Embase, CINAHL and PsycINFO, appropriate subject headings were used along with text words and the search strategy was adapted for other databases using text words. Concepts searched were eating disorders, anorexia nervosa and female athlete triad syndrome. An additional search was conducted in June, 2016, using the same databases listed above except Clinical Evidence and with the addition of Nursing+ and Registered Nurses’ Association of Ontario Best Practice Guidelines. Previously searched concepts were limited to March, 2015 to current. Newly selected concepts, bulimia nervosa, feeding and eating disorders of childhood and avoidant/restrictive food intake disorder (ARFID), were searched from 2006 to current. Retrieval from all searches was limited to humans, English language and certain evidence categories, such as relevant publication types, index terms for study types and other similar limits. Additional articles were identified by team members and added to the results.

Susan Groshong, MLIS
March 29, 2017

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Included Studies


Included Studies


Included Studies


Medical Disclaimer

Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required.

The authors have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at the time of publication.

However, in view of the possibility of human error or changes in medical sciences, neither the authors nor Seattle Children’s Healthcare System nor any other party who has been involved in the preparation or publication of this work warrants that the information contained herein is in every respect accurate or complete, and they are not responsible for any errors or omissions or for the results obtained from the use of such information.

Readers should confirm the information contained herein with other sources and are encouraged to consult with their health care provider before making any health care decision.