Anorexia Nervosa:
The Management of the Paediatric Patient
National Clinical Practice Guidance

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National Clinical Programme for Paediatrics and Neonatology, Health Service Executive, Clinical Design and Innovation, HSE.

Disclaimer: This guideline replaces the 2019 Anorexia Nervosa: The Acute Management of the Paediatric Patient. The information and appendices are current at the time of publication and are for use within CHI and nationally. This guideline does not replace clinical judgement and expertise and does not supersede the responsibility to make decisions appropriate to the circumstances of the individual. It is acknowledged that these guidelines may differ from local policies and procedures and that some elements of the guideline will need to be adapted to suit local need and resources.

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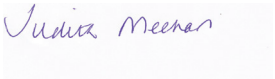
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INTRODUCTION

On behalf of the National Clinical Programme for Paediatrics and Neonatology, Children's Health Ireland, the National Clinical Programme for Eating Disorders and the Faculty of Paediatrics at RCPI we are pleased to present to you this collaborative Clinical practice guidance document "***Anorexia Nervosa": The Management of the Paediatric Patient National Clinical Practice Guidance"*** which aims to provide clinical teams with a framework for the management of the Paediatric patient. It has evolved from, and now replaces, the multidisciplinary CHI guideline which was first published in 2019. One of the core modifications from the original document is the reference now to The Royal College of Psychiatrists ***"Medical Emergencies in Eating Disorders: Guidance on Recognition and Management (MEED)"*** published in May 2022 which has replaced the ***Junior MARSIPAN: Management of Really Sick Patients under 18 with Anorexia Nervosa (2015).***

Eating Disorders have the highest mortality and morbidity risk of all the mental health disorders. The acute management of anorexia nervosa is complex and requires close multidisciplinary teamwork. The best prognosis is associated with early effective evidence based care from staff knowledgeable in eating disorders. Families and carers are central to the evidence based treatments for anorexia nervosa. This multidisciplinary clinical guidance document will support teams in paediatric settings in the assessment and management of children to reduce morbidity, mortality and the psychological impact associated with this complex disorder.

Sincere thank you to all who have contributed their time and expertise to the development of this clinical guidance document.

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AIM

The aim of this guideline is to promote a safe, standardised and evidence-based approach to assessment and management of children and adolescents presenting to Children's Health Ireland (CHI) or to other regional and local Paediatric units with Anorexia Nervosa (AN), in line with the HSE Model of Care for Eating Disorders available at https://www.hse.ie/eng/about/who/cspd/ncps/mental-health/eating-disorders/moc/hse-eating-disorder-services-model-of-care.pdf
This guideline may also be relevant to those with different types of restrictive eating disorders).

DEFINITION OF TERMS

AN	Anorexia Nervosa
BP	Blood Pressure
BPM	Beats Per Minute
CAMHS	Child and Adolescent Mental Health Services
EAR	Estimated Average Requirement
ED	Emergency Department
FBT	Family Based Therapy
HR	Heart Rate
MDT	Multidisciplinary Team
NG	Nasogastric
Orthostatic vitals	Patient to lie down for 5 minutes, take their HR and BP, then have them stand up for 3 minutes and repeat their HR and BP
PEWS	Paediatric Early Warning Score
PVCs	Premature ventricular contractions
Refeeding syndrome	Severe fluid and electrolyte shifts (especially, but not exclusively, of phosphate) and their associated complications in malnourished patients undergoing refeeding
RNI	Reference Nutrient Intake
SO	Special Observer (most often a Healthcare Assistant assigned 1:1)
USG	Urine Specific Gravity

TARGET PATIENT POPULATION

This guideline is intended for children and adolescents presenting to CHI and regional and local Paediatric units throughout Ireland with Anorexia Nervosa (AN).

TARGET USERS

This guideline should be used by all members of the multidisciplinary team (MDT) involved inthe management of patients with AN including, but not limited to:

- Consultant Paediatricians
- Non-Consultant Hospital Doctors
- Paediatric Dietitians
- Child and Adolescent Psychiatrists
- Clinical Nurse Specialists in Mental Health and Paediatrics
- Nursing Staff
- Mental Health Social Workers / Medical Social Workers
- Healthcare Assistants / Special Observers

BACKGROUND TO THE CLINICAL GUIDELINE

This guidance has evolved from, and replaces, the CHI Guidance "Anorexia Nervosa: The Acute Management of the Paediatric Patient, (2019)."

All healthcare professionals should be aware that Anorexia Nervosa (AN) is a serious disorder with life threatening physical and psychological complications. AN has the highest mortality rate of all the mental health conditions, with patients having a standard mortality ratio 10 times that of their adolescent peers. Early intervention is associated with better outcomes and higher recovery rate. The clinical needs of this group of patients cross the traditional divide between mental and physical health services requires an integrated approach to service provision.

The Royal College of Psychiatrists published the Medical Emergencies in Eating Disorders: Guidance on Recognition and Management (MEED) in May 2022. This replaces the Junior MARSIPAN: Management of Really Sick Patients under 18 with Anorexia Nervosa published in 2015. The HSE National Clinical Programme for Eating Disorders launched the Model of Care for Eating Disorder Services in Ireland in January 2018. The Clinical Programme for Eating Disorders, Paediatrics and Acute Medicine all endorse the MEED risk-management guidelines for Anorexia Nervosa as a framework for shared and collaborative care between acute hospitals and eating disorder services.

Note: The management and risk assessment of patients with underlying Type 1 diabetes and eating disorders presents extra complexity. Please refer to the MEED guidance document for this specific cohort. https://www.rcpsych.ac.uk/improving-care/campaigning-for-better-mental-health-policy/college-reports/2022-college-reports/cr233

SECTION 1:

MEDICAL ASSESSMENT:

MEDICAL TEAM (EMERGENCY DEPARTMENT/OUTPATIENT CLINIC)

When a patient presents with weight loss the role of the medical team is to consider and/or confirm the diagnosis of Anorexia Nervosa (AN) and exclude alternative causes of weight loss, e.g. GI causes (coeliac disease, inflammatory bowel disease), adrenal insufficiency (Addison's disease) and causes of reduced intake and vomiting (space occupying lesion). This can be achieved with a detailed clinical history and thorough physical examination. It is also the responsibility of the medical team to assess the degree of malnutrition.

Adapted from the ICD -11 Diagnostic Criteria, Anorexia Nervosa is defined as:

- Significantly low body weight for the individual's height, age and developmental stage
  - Not due to another health condition or to the unavailability of food
- Accompanied by a persistent pattern of behaviours to prevent restoration of normal weight, which may include:
  - Behaviours aimed at reducing intake (restricted intake)
  - Purging behaviours (e.g. self –induced vomiting, laxative abuse)
  - Behaviours aimed at increasing energy expenditure (e.g. excessive exercise)
- Typically associated with a fear of weight gain
- Excessive preoccupation with weight or shape
  - Where low weight is central to the person's self-evaluation or
  - Their shape/weight is inaccurately perceived to be normal or even excessive
  - Body Checking and/or avoidance behaviours

Low body weight:

- Common threshold is BMI-for-age under 5th percentile in children and adolescents
- Children and adolescents may exhibit failure to gain weight as expected based on the individual developmental trajectory rather than weight loss
- Rapid weight loss (e.g., more than 20% of total body weight within 6 months) may replace the low body weight essential feature as long as other diagnostic requirements are met. Therefore patients can have Anorexia Nervosa despite their weight being normal for their age. Patients with this presentation may not appear emaciated however their restriction and weight loss results in the same medical complications and risks as those underweight. This was previously described as atypical anorexia.

Additional Clinical Considerations

- Consider the degree of malnutrition in children and adolescents:
  - Mild: 80-90% median BMI, >10% loss of body mass
  - Moderate: 70-79% median BMI, >15% loss of body mass
  - Severe: <70% median BMI, >20% loss of body mass in 1 year or >10% loss in 6 months
- An explicitly stated fear of weight gain is not an absolute requirement for the diagnosis of Anorexia Nervosa provided that the behaviours maintaining underweight status appear to be intentional and there are other behavioural indicators of preoccupation with body weight or shape (e.g., repeated checking or extreme avoidance behaviours).
- Children with Anorexia Nervosa may not be able to articulate body image concerns and emotions related to restrictive eating. Presenting features may include avoidance of food intake with denial of the severity of malnutrition for reasons other than body image concerns (e.g., reporting they are 'not hungry' or have abdominal pain).
- Children with Anorexia Nervosa are less likely to engage in binge eating and purging or to engage in other compensatory behaviours.

CLINICAL HISTORY

Presenting Complaint and History of Presenting Complaint:

Diagnose Anorexia Nervosa and exclude an alternative cause of the weight loss

Weight history	Timeline: rate and duration of weight loss, premorbid/highest weight, lowest weight, goal/ideal weight, weight and body checking
Dietary restriction	Timeline, portions, progression, circumstances/triggers, food groups avoided, safe foods, new vegetarianism/food intolerances, 24-hr dietary recall, episodes of fasting
Meal socialisation	Prefers to eat alone, preoccupation with ingredients, baking/cooking for others but not eating it themselves
Unusual eating attitudes/behaviours	Small bites/pieces, eats slowly, strict times, calorie counting, label reading, measuring, habits/rituals around food
Fluid intake	Restriction or excess, caffeine
Other	Diet pills/supplements, diuretics, laxatives, nicotine use
Physical activity	Timeline, increase, type, frequency, duration, competitive sports, solo exercise, reasons for exercising
Purging behaviours (vomiting, laxatives)	Methods, frequency, circumstances/triggers, progression
Bingeing	Frequency, foods, approx. amount, circumstances/triggers, sense of loss of control

Body image	Happy with look, change/dislike anything, relentless pursuit of thinness, distorted body image, fear of weight gain
Insight	Low weight, failure to gain weight, medical instability
Menstrual history	Age of menarche, maternal age of menarche if pre-menarchal, frequency/regularity and duration, change in cycle, last normal menstrual period, history of primary/secondary amenorrhoea, weight at last normal menstrual period, contraception, possibility of pregnancy

Previous Medical and Family History:

Past Medical History	Birth, developmental milestones, hospitalisations
Past Surgical History	Injuries, operations
Past Psychiatric History	Anxiety, depression, obsessive compulsive disorder, autism spectrum disorder
Medications and Allergies	
Immunisation status	
Family Medical History	Gastrointestinal (IBD), Endocrine (Thyroid), Rheumatology, Autoimmune (Coeliac), Genetic (Short Stature)
Family Psychiatric History	Eating disorder, anxiety, depression, obsessive compulsive disorder

Review of Systems:

Symptoms of Starvation/Orthostatic instability/ an alternative cause of weight loss

Neurological	Poor concentration or memory loss, headaches, insomnia, seizures, visual changes, numbness
Cardiovascular	Postural dizziness and fainting, chest pain, palpitations, unusual heart beats, shortness of breath, exercise intolerance, blue/swollen hands/feet
Respiratory	Shortness of breath, exercise intolerance
Gastrointestinal	Early satiety, abdominal discomfort, bloating and pain, constipation, diarrhoea, haematemesis, gastroesophageal reflux, dental caries, swollen parotids
Genitourinary	Menstrual changes, amenorrhoea, dysuria, haematuria
Haematological	Easy bruising, frequent or prolonged minor illnesses
Musculoskeletal	Fractures, muscle weakness and cramps
Endocrine	Cold intolerance, low energy/fatigue
Skin and Hair	Hair loss, thinning of hair, lanugo hair, dry skin, yellowish skin
Rheumatological	Fever, joint swelling/pain/stiffness, night sweats, rashes

PSYCHOSOCIAL ASSESSMENT (HEEADSSS):

The medical team should take a developmentally appropriate psychosocial history. HEEADSSS is a structured interview that aims to identify psychosocial risks for adolescents. Not all aspects of the assessment need to be completed on admission, and it is important for all members of the MDT to collaborate and ensure questions aren't repeated unnecessarily.

Home and family relationships	Including parents' occupations, stress at home
Education and Employment	High achiever, perfectionistic
Eating	Already completed as part of history of presenting complaint
Activities and peer relationships	Competitive sports
Drugs, alcohol, substance use	Including smoking
Sexual health	Including orientation, sexual activity and contraceptive use
Self-harm and suicidal ideation	Poor self-esteem, isolation, inflexibility, irritability
Safety	Physical or emotional trauma/abuse (bullying)

PHYSICAL EXAMINATION:

Signs of starvation and orthostatic instability

Growth Centiles	Height, Weight and calculate BMI (plot on appropriate growth and BMI charts)
Vital Signs	Lying and standing BP and HR: orthostatic changes Temperature: hypothermia
Neurological	Central nervous system: PEARL, fundoscopy, cranial nerves Peripheral nervous system: muscle bulk, tone and strength, reflexes, gait and balance
Cardiovascular	Heart sounds, bradycardia, hypotension, acrocyanosis, dependent oedema, delayed peripheral capillary refill time Systolic murmur (sometimes assoc. with mitral valve prolapse)
Respiratory	Good air entry to bases bilaterally (pleural effusion)
Gastrointestinal	Bowel sounds, organomegaly, mass, epigastric discomfort, scaphoid abdomen
Genitourinary	Tanner Stage/Sexual Maturity Rating
Haematological	Pallor, bruising
Musculoskeletal	Fractures, muscle wasting, scoliosis
Skin and Hair	Dry skin with hyperkeratotic areas, yellow discolouration of palms/soles, brittle/pitting/ridging of nails, lanugo hair on back/stomach/face, hair dryness/loss or thinning, callus on dorsum of hand (Russell's sign), sacral pressure ulcers, poor healing of skin

INVESTIGATIONS:

1. Screen for complications of starvation
2. Exclude an alternative cause of weight loss

Required Investigations:

Urinalysis: (dipstick only, do not send to lab unless clinical concern for UTI)

- ✓ Ketones: by-product of fat metabolism when insufficient substrate
- ✓ Urine specific gravity: kidney's ability to concentrate urine. Reference range 1.005-1.030: dilute (<1.005) possible water loading, concentrated (>1.030) could indicate dehydration
- ✓ Blood: Menstruation

Electrocardiogram:

1. Bradycardia, PVC's, arrhythmias
2. Prolonged QTc: medical team to calculate manually

All patients should have an ECG performed and reviewed on admission. An abnormal QTc should be discussed with a senior medical team member e.g. Paediatric Registrar or Consultant, and the nurse in charge. NB: Consider differential diagnosis of congenital QTc and ask about family history of long QT/arrhythmia/sudden death.

https://www.crediblemeds.org/ is useful to check medicines that may have an effect on the QT interval. See **Appendix 1** for an explanation on how to manually calculate the QTc.

Bloods:

- ❖ FBC
- ❖ Glucose
- ❖ Na, K, Cl, Urea, Creatinine, Protein, Albumin, Ca, Phosphate, Mg
- ❖ Bilirubin, ALP, AST, ALT
- ❖ Venous blood gas and lipase/amylase if purging
- ❖ Vitamin D (Cholecalciferol)
- ❖ Ferritin
- ❖ TFTs

Clinically Indicated Investigations:

Bloods:

- Vitamins A, E, Folate, Vitamin B12, Zinc (nutritional deficiencies)
- ESR, CRP (inflammatory conditions)
- Early AM Cortisol (Addison's disease)
- Ig A and Anti-tTG (Coeliac disease)
- Faecal calprotectin (Inflammatory Bowel Disease)
- Beta HCG, LH, FSH, oestradiol and prolactin (amenorrhoeic females)
- Testosterone and Sex Hormone Binding Globulin (males with pubertal delay)
- Coagulations studies (if bruising evident)

Echocardiogram:

✓ Rarely required if symptoms of cardiorespiratory compromise.

✓ Pericardial effusions: rare in AN; and echocardiograms rarely required.

Radiology:

- Chest X Ray +/- Mantoux (Neoplasm, Infection)
- MRI Brain (Space Occupying Lesion)
- If evidence of hypogonadism or chronic low weight/BMI, then full assessment of bone health and pubertal status +/- a DXA to be considered
  - It is important to explain that the main way of preventing and treating low BMD is reaching and maintaining a healthy weight/BMI for their age.

SECTION 2:
RISK ASSESSMENT:

MEDICAL TEAM (EMERGENCY DEPARTMENT/OUTPATIENTS)

A Medical Emergencies in Eating Disorders (MEED) guide to risk assessment should be completed by the medical team on all patients presenting to the Emergency Department/outpatient setting (see **Appendix 2)**

- Each item is scored on a range from green (low risk), amber (alert) or red (high risk).
- Clinicians must consider all items when determining a clinical judgement of the overall risk profile.
- The framework can be used to assess and grade concern but is not a substitute for assessment/ discussion with an experienced clinician.
- Clinicians must be aware that a single item scored red, or a number of items scored in the lower ranges may determine overall risk at time of presentation.

Please ensure that the risk assessment is reviewed and discussed with a senior clinician prior to formulating a treatment plan.

Low risk patients should be referred back to the GP with advice to refer to local CAMHS. Upon discharge from the Emergency Department please give parents:

- **Appendix 3:** Information leaflet on signs and symptoms to look out for that would warrant them bringing their child back for reassessment in the Emergency Department.
- **Appendix 4:** Educational Resources: so they can start educating themselves and seeking support in caring for a child with Anorexia.

Medium to high-risk patients may require admission for acute medical management and/or nutrition support.

Once admitted the patient should be started on an out of hours meal plan (Appendix 5 for patients who weigh <35kg and Appendix 6 for patients who weigh >35kg) and referred to the dietitian and local psychiatry team.

SECTION 3:

INPATIENT MULTIDISCIPLINARY ASSESSMENT & MANAGEMENT

MULTIDISCIPLINARY MODEL OF CARE

The HSE Model of Care for Eating Disorders Services recommends that the goal of admission to acute paediatric services is medical stabilisation, with discharge as soon as possible to appropriate community treatment provision.

Goals should be clearly outlined and agreed with the patient/family from the start:

1. Medical assessment and stabilisation of physical complications
2. Initiation of weight restoration: achieved through rest and adequate nutrition and management of refeeding syndrome if it occurs, to such a level that allows safe discharge to further care
3. Provision of psychoeducation to support and enable safe and timely discharge planning to onward services. (Please see **Appendix 3** for educational resources for patients and families).

Effective management of patients in the acute setting requires good multidisciplinary team (MDT) working, through close liaison between staff providing holistic care. An initial meeting of the team should occur as soon as possible after admission, with further reviews occurring at least once weekly. Regular MDT meetings, including the parents, will help to facilitate communication both within the team and with the parents and the patient. A collaborative care plan to be agreed with MDT team members and patient/family and documented in medical records. This plan will need to be updated at weekly MDT meetings.

The involvement of each member of the MDT is briefly described below:

1. The Medical Team: medical assessment, stabilisation and monitoring for complications
2. Dietitian: provision of meal plans and mineral supplementation for nutritional deficiencies through regular consultation
3. Ward nursing: day to day nursing care including orthostatic vital sign monitoring and support of patient and family
4. Special observers: meal support and supervision, patient and family support
5. Local Psychiatry Team: diagnostic clarification, preparation of patient and family for discharge to appropriate CAMHS services for follow up care.

SECTION 4:
INPATIENT MEDICAL MANAGEMENT:

MEDICAL TEAM AND NURSING STAFF ON THE WARD

The medical team is responsible for the care of the patient once admitted to the ward. Each patient should be assessed for risk of pressure point breakdown if very low weight, and a specialised mattress ordered if required. Requests for 1:1 supervision, initiation of the appropriate out of hours meal plan and referral to all members of the MDT must be completed upon admission.

On Admission each patient requires daily monitoring for signs of medical instability:

- Hypothermia: Temp <36˚C tympanic
- Severe bradycardia: Standing systolic BP <0.4th centile (84-98 mmHg)
- Hypotension: BP <90/45 mmHg
- Orthostatic instability: HR changes of >35 bpm or systolic BP changes of >15 mmHg
- Weak pulses or poor peripheral perfusion
- Evidence of abnormalities on blood work

Blood Work

1. Each patient should have a daily medical review with daily biochemistry (Na, K, Cl, Urea, Creat, Ca, Phos, and Mg) for the first 2-5 days following the initiation of refeeding. These may need to be repeated at 7-10 days for assessment of delayed onset refeeding syndrome.
2. The patient should be monitored for signs and symptoms of refeeding syndrome including neurological or cardiovascular signs such as confusion, oedema or weakness.

Any abnormal values on admission bloods will require consultation by the necessary subspecialist service (e.g. endocrine if low AM cortisol detected), or follow up before discharge from the hospital (e.g. resolution of transaminitis).

REFEEDING SYNDROME

Refeeding syndrome is a serious potential complication of commencing feeding in children and young people who have experienced starvation. Patients are at the highest risk in the first 2-5 days after the initiation of refeeding. Refeeding syndrome is characterised by biochemical abnormalities **AND** clinical findings. The most significant finding will be a fall in phosphate. The most important factor is anticipating and remaining vigilant for biochemical and clinical features of it. Please see **Appendix 7** for the definition of refeeding syndrome, details on who is most at risk, other important considerations, treatment of hypophosphataemia, the monitoring required and the treatment of refeeding syndrome.

FLUID MANAGEMENT

Intravenous fluids should be avoided unless absolutely necessary as saline boluses could cause cardiorespiratory compromise and dextrose could initiate refeeding syndrome.

- Oral fluids to be encouraged with a minimum (and maximum) total fluid allowance to be calculated as per dietitian on meal plan
- Strict intake and output (including bowel motions): monitored and recorded in the patient's medical record.

MANAGEMENT OF CONSTIPATION

Please discontinue any laxatives the patient may be taking upon admission.

- With regular adequate oral fluids and nutrition, constipation and abdominal discomfort will resolve.
- For severe abdominal discomfort a hot pack might provide some comfort.
- If constipation remains an issue once regular nutrition and weight restoration has been established, the use of stool softeners and laxatives should be considered by the medical team on an individual basis.

CARDIAC MONITORING:

- Minimum of 48-hour bed rest and continuous beside cardiac monitoring (bradycardia, tachycardia, rhythm abnormalities)
- Orthostatic HR and BP changes 4 times per day (nocturnal measurements are not required). This should be reviewed on a daily basis and continue until the patient is medically stable
- The patient's lowest awake and asleep HR (on cardiac monitor) is to be documented every day and night
- The HR value should be sustained for at least 30 seconds to reflect a true heart rate recording.

CRITERIA FOR DISCONTINUATION OF CONTINUOUS CARDIAC MONITORING:

- Lowest recorded HR of 50bpm for 2 consecutive days: discontinue daytime monitors
- Lowest recorded HR of 45bpm for 2 consecutive nights: discontinue night-time monitors
- Once off continuous bedside cardiac monitoring, orthostatic HR and BP monitoring should continue to be performed four times daily (during daytime hours).

- Orthostatic HR and BP monitoring can be decreased to twice daily (first set completed after breakfast) once patient is:
  - Off continuous cardiac monitoring (minimum of 2 days)
  - No longer at risk of refeeding syndrome (typically 5 days)

Criteria for medical stability:

- Off cardiac monitors for 48 hours
- HR increase from lying to standing less than 35bpm for 48 hours
- Systolic BP decrease from lying to standing less than 15 mmHg for 48 hours

Once medical stability is achieved the patient can be taken off strict bed rest, however activity should be limited as any increase in activity levels will require extra nutrition in order to continue with weight restoration.

MEDICAL MANAGEMENT OF NUTRITIONAL REHABILITATION (SEE DIETETICS SECTION FOR MORE DETAIL)

If the patient is admitted out of hours (evening or weekend) it is the responsibility of the admitting medical team to commence them on the appropriate out of hours meal plan.

Appendix 5 is the out of hours meal plan for a patient who weighs <35kg.
Appendix 6 is the out of hours meal plan for a patient who weighs >35kg.

1. A full dietary assessment will be conducted by a dietitian and daily nutritional requirement calculated and prescribed to enable medical stabilisation and weight restoration. Patients require full supervision and support to enable to complete their prescribed nutrition.
2. A comprehensive oral meal plan is devised, consisting of clear expectations about what is to be consumed at each meal and snack time, and supplement drink top ups if required. If the meal plan and supplement drink top ups are not consumed then serious consideration for nasogastric tube (NG) insertion should occur.
3. If NG feeding is required, a bolus feeding regimen should be implemented as it most mimics normal physiology. It delivers feed in a shorter period which reduces opportunities for compensatory behaviours and has the least impact on staffing.
4. Bolus feeding allows food and supplements to be offered on each occasion before the feed is given. The patient has a choice to complete their nutrition orally and not require the NG feed at every meal/snack. It is recommended to remove a NG that is not required for 48 hours.
5. Food is the medicine for all patients with an eating disorder. As such, patients should complete all their prescribed nutrition each day to support medical stabilization. Any missed nutrition has the potential to prolong their admission and delay their recovery.

MEDICATION PRESCRIBING

Medications	Indications and Cautions
Multi-vitamin and mineral supplements: Centrum Kids ≥4 years Centrum Advance ≥11 years	• Prescribed to all admitted patients. • Should be continued upon discharge.
Vitamin D: 400 international units (prophylactic dose)	• Check Vitamin D on admission. • Malnourished patients are at risk of low Vitamin D levels, and patients admitted have decreased exposure to daylight. • Prescribe a prophylactic dose whilst waiting for levels. This can be altered thereafter if required or continued at the prophylactic dose if normal.
Phosphate:	• **Not routinely used prophylactically.** Discuss with a Consultant when previous history of refeeding syndrome and/or multiple risk factors for refeeding syndrome **(Appendix 7)**. • It is unpalatable and prolonged usage can lead to a renal driven paradoxical hypophosphataemia.
Laxatives: Lactulose Macrogols Movicol®/ Laxido®	• Rarely required and should be prescribed with caution following review of daily bowel chart, and discussion with the MDT. • Refeeding may cause feelings of fullness and discomfort, but with time and regular meals most patients will develop regular bowel habits.
Thiamine: 200mg once daily The total dose may be given in 2–3 divided doses	• **Not routinely used.** Discuss with a consultant when starvation has been very prolonged (e.g. >1 year very low weight and poor intake) and there is a concern about vitamin deficiency, or patient is at high risk of refeeding syndrome.

DISCHARGE MANAGEMENT

A medical discharge summary should be provided to the patient's General Practitioner (GP) with details of the admission, medical management and clear recommendations on the GPs requirement to continue the medical monitoring in the community. A copy should be also sent to the treating CAMHS service.

SECTION 5:
WARD NURSING STAFF AND SPECIAL OBSERVERS

Nursing staff are an integral part of the provision of care of the patient admitted with AN, providing on-going consultation with all disciplines from the MDT. In line with holistic nursing care, nursing staff have an opportunity to develop a rapport with the patient and family, providing compassionate care and emotional support at a time of significant stress.

Nursing staff will support the patient's safety by reviewing the environmental safety of the admission room in line with ward policy. Visitors should be kept to a minimum, with only immediate family/ guardians allowed initially. This is to allow the patient focus on re-establishing a normal eating pattern, promote rest and allow recovery free from distraction.

Nursing staff should refer to their local nursing care plans for the patient admitted with AN. Nursing staff should alert the medical team if they think a patient requires a pressure supported mattress in line with nursing assessment guidelines.

In line with standards of care for all patients admitted, nursing staff will attend to the general paediatric nursing needs of the patient, including physical observations and dispensing of prescribed medication.

Please see **Appendix 8** for a summary of the unique nursing considerations when caring for a patient admitted with Anorexia Nervosa.

PEWS AND ORTHOSTATIC VITAL SIGNS MONITORING

Nursing staff will be responsible for completion of the PEWs documentation as per local hospital guidelines.

Additional vital signs monitoring specifically for patients with AN will be requested by the medical team, e.g. orthostatic vital sign monitoring (have patient lie down for 5 minutes and take their HR and BP, then have them stand up for 3 minutes and repeat), and signs of medical instability should be documented clearly and reported to the nurse in charge and the medical team.

WEIGHT MONITORING

Weight monitoring may be the responsibility for paediatric nursing staff or dietetics depending on locally agreed arrangements. Weights should be clearly documented and filed in a location which is accessible to relevant staff involved in the provision of care to the young person. A daily record of bowel motions will facilitate accurate weight and nutritional assessment.

A baseline weight should be undertaken on the morning post admission and thereafter twice weekly on specified days (e.g. Monday and Thursday). All weights should be undertaken as follows:

- Calibrated digital scale
- Light clothing (e.g. remove jumper, empty pockets), without shoes
- Before breakfast and post voiding

URINALYSIS: *(dipstick only, do not send to lab unless clinical concern for UTI)*

Urinalysis should be completed twice weekly before the patients' weight is checked to facilitate a more accurate weight and hydration status assessment. Urinalysis provides important clinical information such as:

- Ketones (by-product of fat metabolism when the body doesn't have enough fuel)
- Urine specific gravity (kidney's ability to concentrate urine). Reference range 1.005-1.030. Dilute (<1.005) could indicate water-loading, concentrated (>1.030) could indicate dehydration.
- Blood (menstruation or kidney damage)

NURSING SUPPORT REQUIRED TO ACHIEVE MEDICAL STABILISATION:

> ***The goal of admission is medical stabilisation, which is achieved through rest, nutritional rehabilitation and weight restoration. In order to achieve this, patients require significant support which is provided through 1:1 supervision. This can be provided by their parents and/or special observers.***

LEVELS OF SUPERVISION INCLUDE:

- Maximum: 24 hour supervision
- Daytime Supervision: including all meals and snacks (e.g. 8am- 8pm)
- Minimum: Meal and snack supervision (inc. 60 mins after meals and 30 mins after snacks)

Parents are generally the best persons to support and supervise the child during admission and the MDT should support parents to fulfil this role as much as possible. However, there may be instances where parents are unable to provide on-site supervision to their child (e.g. childcare or work commitments). Parents may also experience carer burnout and be unable to manage to contain anxiety around meals and/ or young person's anorectic thoughts and feelings. For any of the above reasons, or if a young person is presenting with aggression or self-harm, the MDT may consider the provision of additional support and supervision, through use of a 'special observer', usually a HCA or nursing staff.

If it is assessed by the MDT that the patient may require close supervision by a special observer, nursing staff will contact ward and hospital management to discuss this, and co-ordinate provision of a special observer if possible, in line with local nursing policy and guidelines.

Nurses will provide and review the local guidance regarding roles and responsibilities with the special observer at the start of their shift. See **Appendix 9** for a summary of the supervision requirements that should be updated weekly and left at front of nursing folder.

BATHROOM/HYGIENE NEEDS

Bathroom visits are encouraged prior to meal-times as patients are advised against use of bathroom during the 60 mins rest after meals and 30 mins after snacks.

If concerns regarding the safety of unsupervised bathroom access exist, these concerns will be discussed with parents, and bathroom supervision may be recommended.

Unsupervised bathroom access may pose a risk to a young person such as:

- Risk of collapse during periods of acute medical instability
- Experiencing strong urges to engage in eating disordered behaviours such as purging, covert exercise, or water loading
- A young person presenting a risk to themselves through self-harm, suicidal thoughts or behaviours.

If bathroom supervision is required, it must be clearly documented in the young person's clinical notes, and provision of local arrangements to ensure dignity and privacy (e.g. parent/special observer standing outside with the door ajar) for the patient will be clearly discussed with parents and consent documented.

SHOWERS: Once medically stable and discussed with the MDT all patients should be allowed to have a shower. It is recommended that this is fully supervised by a parent, that the young person remains seated, the water not too hot and it lasts no longer than 5 minutes.

ACTIVITY LEVELS

The patient will initially require strict bed rest for a minimum period of 48 hours whilst undergoing assessment of their medical stability. Once they are medically stable and off bed rest their activity levels must be closely monitored. This supports weight restoration by reducing activity and the risk of the young person engaging in compensatory behaviours after meals such as exercise or purging. It also allows for safe advancement from bed rest to time outside the hospital based on their medical stability and progress with weight restoration. The decision regarding activity levels should be made by the MDT and explained to the patient and their family.

Please see **Appendix 10** for a description of the Activity Levels for staff and medical requirements for advancement. Please note that this is not a checklist and is to act as a guide for clinicians to use professional judgement. Patients may move between stages in either direction based on medical status. Not all patients will advance through all the stages, and a patient does not have to have reached levels of independent mobility to allow transfer to another setting. It is not necessary to complete all stages prior to discharge.

The MDT can also share **Appendix 11** with patients and families so they know what to expect during the admission.

NUTRITIONAL SUPPORT

Nutrition is a critical part of treatment. A meal plan is devised following dietetic assessment, which includes consultation with the patient and family. Meals must be provided to the young person as prescribed by the dietitian. Once they are served they are not negotiable and the patient/family cannot request to swap any part of it.

Meals that are well planned can lower anxiety, minimises negotiation and ensures adequate nutrition for the patient. Meals are time limited e.g. 30mins/meal and 15mins/snack. Food, drinks and nutritional supplements should be removed from packaging and served in hospital plates and cups. Nurses will provide meals/snacks and manage the time limits for these meals in collaboration with the special observer/family, and dispense oral nutritional supplements, or provide nasogastric feeding as indicated by the young person's dietetic plan.

After the allotted time period, unfinished food /drink items will be removed by nursing staff (not by special observer/family). Exactly what food/drink was provided and what was consumed must be clearly documented by the nursing staff in a format agreed at local level. This allows accurate recording of food consumed, and assessment of whether additional nutritional supplements are required if prescribed. If a parent or special observer is supervising the meal they must report what was eaten to the nurse so it can be recorded. See **Appendix 12** for an example of a Food and Fluid Record Chart.

If a young person has been unable to complete their meal or snack in thetime allowed, nursing staff will dispense the recommended amount of prescribed oral nutritional supplement (e.g. fortisip) to the patient as per meal plan guidance. The patients will have 15 minutes to complete this.

If the patient requires nasogastric (NG) tube insertion, the NG tube should be inserted by nursing staff as per local policy. The position of the tube is checked prior to each feed. Please refer to your local units guideline on NG tube care. If a young person requires nasogastric feeding, the timing and amounts required will be prescribed as per meal plan, and the nursing staff will administer the feed in line with same.

MEAL SUPPORT AND SUPERVISION

Everyone providing meal support should watch this meal support educational video:

https://m.youtube.com/watch? v=l7gyifpv4o4&pp=ygUxbWVhbCBzdXBlcnZpc2lvbiBmb3IgZmFtaWxpZXMga2VsdH kgbWVudGFsIGhlYWx0aA%3D%3D

(Please watch on personal laptop/phone as most institutions block You Tube).

Meals may promote significant anxiety for a young person, and for their parents/carers who may struggle to cope with their child's distress.

Parents are best considered partners in the process of recovery from the start of the admission. With support and psychoeducation from the MDT, they should be encouraged to provide meal support to their child when available to and given their individual or family circumstances.

Patients may require regular prompting to start and finish meals. Parents/special observers are encouraged to keep the conversation light and avoid discussions of food around mealtime (food issues can be discussed away from meal times).

Please see **Appendix 13** for a detailed Meal Supervision Guidelines for Staff and **Appendix 14** for a detailed Meal Supervision Guideline for Families supporting a young person with their meals.

4 C's of meal support:

Remain CALM, Be CONFIDENT,

Be CONSISTENT, Be COMPASSIONATE.

SECTION 6: DIETITIAN

Dietitians are uniquely qualified to evaluate appropriate weight goals in the context of the patient's nutritional and developmental stage and to restore a healthy weight through the development of safe, appropriate nutrition care plans.

The dietitian has a key role in the following areas:

- Conducting a nutritional assessment
- Monitoring and interpreting anthropometry
- Monitoring biochemistry and identifying level of refeeding risk
- Safely refeeding a young person through nutrition, including oral nutritional supplements (ONS) and enteral feeding
- Supporting the young person to change their eating behaviours and provide psychoeducation
- Providing evidence-based nutritional information to all members of the MDT.

NUTRITIONAL ASSESSMENT

The dietitian will conduct a nutritional assessment based on the Nutrition Care Process and Model (NCPM). This will require review of healthcare records, and discussion with the Psychiatry Liaison Service (PLS), the medical team, nursing staff, patient and parents/guardians/ to obtain the information as per **Table 1** below.

TABLE 1: NUTRITION AND DIETETIC ASSESSMENT (NCPM FORMAT):

1. Medical, tests and Procedures **Medical history** **Surgical history** **Psychosocial history**	• Date and reason for referral • Diagnosis • Medical history & psychiatry history • Family history (relevant medical & psychiatric history) • Psychosocial history (education, friendships, alcohol/drug use) • History of presenting complaint: weight history, goal/target weight, distorted body image/body checking, timeline of dietary restriction, nutrition related beliefs/rituals/rules, meal socialisation, fluid intake, use of laxatives/diuretics/diet pills/supplements, compensatory behaviours, physical activity, menstrual history, insight into illness • Investigations and MDT input

2. Biochemistry	• Refer to 'Routine' and 'When Clinically Indicated' investigations outlined in Section 1 Medical Assessment • Blood glucose levels (as clinically indicated) Note: Chronic malnutrition and/or risk of refeeding syndrome may still be present with normal baseline biochemistry
3. Medications history	• Prescribed medications (including oral contraceptive pill) • Multi-vitamin and mineral supplements • Electrolytes • Oral nutritional supplements (ONS) and electrolytes
4. Nutrition focused physical findings	• Vital signs Lying and standing BP and HR: orthostatic changes Temperature • Fluid balance chart • General physical appearance: consider completing a Nutrition Focused Physical Examination (NFPE) including assessment of Fat and muscle store loss Severity of malnutrition Hand Grip Strength Function • Gastrointestinal Appetite/early satiety Abdominal discomfort/bloating/delayed gastric emptying Bowel habit Nausea/vomiting (assess if self-induced) Gastroesophageal reflux Oral health/dentition/dental caries Dry mouth/lips Parotitis • Pubertal development Age of menarche, last menstrual cycle Change in menstrual cycle/primary or secondary amenorrhea Tanner staging (as per medical assessment) • Physical Symptoms Dry skin Pressure sores Oedema Hair loss/thinning, lanugo hair Cold extremities/intolerance Burst blood vessels in the eyes Dorsal hand calluses • Neurological Poor concentration/memory loss Mood

5. Anthropometry	**Weight** • Collect weight history Plot premorbid growth trajectory on appropriate growth chart (Girls/Boys UK 2-20yr Childhood and puberty close monitoring (CPCM) growth chart (RCPCH 2013)) • Calculate percentage loss of body weight over time • Check blind weight on admission using a calibrated digital scale in light clothing, without shoes or jewellery and post voiding • Check blind weight and urinalysis twice weekly on specified days (usually Monday and Thursday) • Be aware that weight checks can be distressing for patients • Monitor for falsifying weight with fluid overload/concealing weights • All subsequent weight checks should be taken on the same scales, in light clothing, before breakfast and post voiding Document the wight, scales type and clothing worn e.g. 42.3kg; SECA chair scales, cotton pyjamas, no shoes • Record weight on appropriate growth chart (as above) Mid Upper Arm Circumference (MUAC) • Include as routine measure on initial assessment and prior to discharge • Measure using a standard tape measure and plot against NHANES Paediatric MUAC reference ranges (2021) or use Abbott Nutrition Health Institute MUAC z-score (10 to 18 years) measuring tape **Height** • Height should be measured on admission and discharge using a calibrated stadiometer without shoes • Ensure patient is standing at full height • Thereafter check height every 3 months • Record height on anthropometry flowsheet • Plot on appropriate growth chart (as above) **Body Mass Index (BMI)** • Calculate BMI with each weight check • Record BMI on anthropometry flowsheet • Plot on appropriate growth chart (Girls/Boys UK Body mass index (BMI) 2-20 years (RCPCH 2013)) $BMI\ (kg/m^2) = Weight\ (kg) / Height\ (m)^2$

	Percentage Median BMI (% median BMI)
	• Calculate % median BMI with each weight check
	• Record % median BMI on anthropometry flowsheet
	% Median BMI for Age: =
	$\frac{\text{Actual BMI for age (kg/m2)}}{\text{Median BMI (50th percentile) for age \& sex (kg/m}^2\text{)}} \times 100\%$
	• Young people with higher % median BMI will not reflect the duration of weight loss or the degree of malnutrition
	• Note: 100% median BMI is not an appropriate target for all patients
	• Calculate estimated target weight/ideal body weight based on the consideration of:
	  • ideal weight for height
	  • median BMI for age and sex
	  • premorbid weight/height centiles and growth trajectory
	  • previous weight with normal menstruation
	Target weight is determined by the MDT consensus based on dietitian recommendations.

6. Nutritional requirements	• Calculate requirements for energy, protein, fluid and any relevant micronutrients, e.g. iron, calcium, Vitamin D (refer to Nutritional Requirements below)

7. Food and nutrition related history	When collating a patients diet history, it is essential to obtain input from parents/ guardians Collect a detailed history of eating and/or dieting behaviour including: • Pre-morbid dietary intake: include variety, quantity and types/food groups consumed • Food groups/types avoided e.g. vegetarian/vegan, check timing of onset (pre-morbid/form of restriction) • Reported food allergies/intolerances, check if medically diagnosed and timing of onset (pre-morbid/form of restriction) • Restrictions based on religion/culture • Dietary intake pre-admission (typical day) • Safe/unsafe foods i.e. foods that cause anxiety/trigger the young person • Change sequence of points to the following please: • Food rules/rituals/calorie counting/weighing food/food tracking apps • Fussy eating behaviours/restrictions • Binge eating (objective/subjective), frequency, locations, triggers • Meal pattern and social setting around meals, food shopping, meal preparation • Fluid intake: restricted/excessive • Dietary and fluid intake pre-admission: typical day • Caffeinated/stimulant drinks/alcohol/nicotine (cigarettes/vaping)/ recreational drug use • Non prescribed supplements: vitamins, minerals or complementary/ alternative medicine • Body image distortion: body checking/weight monitoring • Psychological: anxiety/obsessional thinking/rigidity • Level of engagement and cognition (level of insight into illness, openness to change/recovery) • Exercise/physical activity levels: pre-morbid versus present type/ duration/frequency: compulsive/isolated/micro-exercising/pacing/ standing/fitness apps.

NUTRITIONAL REQUIREMENTS

Energy requirements

There is no reliable equation to predict energy requirements for restoring weight in patients with AN. Energy requirements may vary considerably throughout nutritional rehabilitation due to metabolic shifts from starvation to fed state.

Energy intakes should be sufficient to achieve a minimum weight gain of 0.5-1kg per week.

A young person may require up to 400-1000kcals/day above their Estimated Average Requirements (EAR) to continue to achieve the target rate of weight restoration. Increased energy requirements may be associated with diet-induced thermogenesis, compensatory behaviours and anxiety.

Refeeding:

Initially commence refeeding at least 30-35kcal/kg/day but not less than immediate pre-admission intake. Increase in increments of at least 200kcal/day every 1-2 days until EAR is achieved. Aim to reach full nutritional requirements for steady weight restoration by days 5-7.

In complex medical presentations feeding may need to commence at a lower rate. In this instance, the dietitian will use thorough clinical judgement alongside the medical team to determine severity of refeeding risk and safe initiation of refeeding.

Do not delay feeding. Deranged electrolytes to be closely monitored and replaced/corrected throughout the duration of refeeding. Increase calorie provision based on thorough clinical judgement.

If sufficient weight gain is not achieved with EAR, continue to increase energy intake by at least 200kcal every 3-4 days until weight continues to restore at a minimum of 0.5-1kg/week.

Weight restoration may be delayed if the patient is engaging in compensatory behaviours. For example, if the patient is prescribed >3000kcal meal plan and assigned restricted activity, suggest to increase supervision or support to monitor and redirect compensatory behaviours.

Protein requirements

Protein intake should aim to achieve the reference nutrient intake (RNI) for age and gender.

Fluid requirements

Patients may be significantly dehydrated on admission. Once this has been corrected, requirements are calculated and incorporated into the meal plan (Holliday-Segar formula).

Calculation of fluid requirements

11-20kg	100ml/kg for the first 10kg + 50ml/kg for the next 10kg
20kg and above	100ml/kg for the first 10kg + 50ml/kg for the next 10kg + 20ml/kg thereafter up to a maximum of 2500ml/day

Excess fluid intake can lead to inaccurate or 'false' weight gain and must be monitored closely. This can affect risk assessment and prescription of meal plans. Check urinalysis with each new weight.

Fluid intake above requirements is not permitted unless clinically indicated through consultation with the medical team.

NUTRITION CARE PLANNING

Refeeding in AN is a complex process that should be commenced gradually following thorough nutritional assessment with close monitoring.

After presentation, prior to initial dietetic review, it is the responsibility of the medical team to commence refeeding as per out of hours guidance (see **Appendix 5 and Appendix 6** for out of hours meal plans for patients <35kg and >35kg respectively).

Once reviewed, the dietitian will prescribe an individualised meal plans, which details meals and snacks, portion sizes and times.

- All food and ONS must be removed from packaging before serving.
- Patients are encouraged to consume all meals and snacks, with no substitutions.
- A generic multivitamin and mineral supplement is prescribed to all admitted patients and should be continued upon discharge.
- Vitamin D supplementation is commenced at a prophylactic dose on admission.
- Thiamine supplementation (not routinely used) should be considered if a patient is at high risk of refeeding syndrome.
- Meal plans should be regularly reviewed to ensure continued sufficient weight restoration is achieved.

If a patient is unable to comply with the food first approach, oral nutritional supplements (ONS) are necessary to achieve the energy target of the meal plan. The dietitian will recommend the most appropriate product based on the patient's age, weight, nutritional requirements and taste preferences e.g. whole protein feeds containing 1-2.4kcals/ml. Juice based supplements are not usually recommended in this patient cohort as they are fat free.

Nasogastric (NG) feeding can support a young person to restore nutritional status. This should be considered through consultation with the medical team if adequate oral nutritional intake cannot be achieved. However, it is not practical for longer term recovery through impacting oral intake and may also present challenges when planning for discharge.

Where NG feeding is indicated, bolus NG feeding is preferable as this mimics normal physiology. Continuous NG feeding may be recommended if patient experiences severe and persistent purging The NG feeding regimen should be determined on an individual patient basis.

All feed labels should be removed or covered.

Parenteral nutrition is not recommended in this patient cohort.

On discharge a dietetic summary should be sent to the CAMHS team and the GP.

SECTION 7:

MENTAL HEALTH

MENTAL HEALTH PROVISION TO PAEDIATRIC SERVICES

The HSE Model of Care for Eating Disorder Services published in 2018 recommends that eight Child and Adolescent Mental Health Service (CAMHS) regional eating disorder teams are developed to provide evidence based care for children and adolescents with eating disorders. Each CAMHS eating disorder team will be linked with their local paediatric hospital and will develop collaborative care pathways in terms of medical admissions of children and adolescents with eating disorders. In areas where CAMHS eating disorder teams have not yet been developed, community CAMHS services continue to provide services for children and adolescents with eating disorders.

The provision of mental health support for children and adolescents with eating disorders in paediatric settings can therefore be provided by PLS service, CAMHS eating disorder team, or a community CAMHS team, and will depend on local mental health service provision and resources. It is suggested paediatric services engage with CAMHS services to clarify mental health provision available at a local level. All medical admissions for eating disorders are recommended to have regular consultant child psychiatry reviews.

ROLE OF MENTAL HEALTH TEAMS IN PAEDIATRIC SETTINGS

Mental Health Teams can provide consultation, psychoeducation and support to the multidisciplinary teams (paediatricians, nursing and dietetics) regarding the provision of care to patients with anorexia nervosa, and support on-going education initiatives within the hospital setting, supporting successful medical stabilization and discharge back to CAMHS services in line with the HSE Model of Care.

Although the extent of mental health provision available will vary depending on local resources, interventions Mental Health teams may provide during paediatric admission are documented below;

1. Assessment:

Mental Health Teams can support paediatric services by confirming the diagnosis of an eating disorder through an initial assessment if the young person is not known to CAMHS, or through an up to date assessment for young people known to CAMHS.

A detailed psychiatric assessment of the patient will also assess for comorbid psychiatric disorders, and a risk assessment, including for the risk of self-harm or suicidal behaviors, aggression and other behavioural manifestations of eating disorders.

A detailed biopsychosocial assessment includes history taking with parents/guardians to assess systemic factors, including parental understanding of the illness and illness related behaviours,

parental roles and strategies for managing illness behaviour, and current psychosocial stressors or supports available to the family.

2. Psychoeducation

Admission to a paediatric setting is a stressful time for the young person and family. Many young people are first diagnosed with an eating disorder following admission to paediatric services, or may be only commencing their treatment intervention with CAMHS. Other young people may require paediatric admission during the course of community-based interventions from CAMHS services.

For young people without a diagnosis or early in their treatment journey, Mental Health Teams can support the admission by providing psychoeducation to the young person and their family regarding their diagnosis and treatment. This may include explaining the diagnosis for the first time to a young person and family while engaging a young person in a shared understanding of their illness and reinforcing rationale regarding their care plan during this acute phase of treatment. For parents this includes provision of information on anorexia nervosa and eating disorders, information on eating disorder support services, such as BODYWHYS, and information on onward treatment pathways and providers. (**Appendix 4** Education Resources for Patients and Families)

3. Supporting engagement with the Paediatric admission.

Central to forming a compassionate approach to treatment is acknowledging for a young person the intensity of their anorectic thoughts, and the impacts of these thoughts on their feelings and therefore behaviours This compassion is combined with explaining and emphasising the necessity of the paediatric intervention at this time to protect them from harm due to their illness.

Mental Health Teams may contribute to this process in helping the young person identify barriers to engagement, such as intense anxiety, and/or identify motivators for engagement, such as being able to return to home, or re-engage with peers or school in the longer term.

Central to the treatment of both paediatric and CAMHS provision for eating disorders is the principal of family-based care. Empowering parents to continue to care for their child during the paediatric admission whenever possible, brings many benefits. For the child, who is medically unwell, in an unfamiliar environment, and faced with the daunting prospect of refeeding, parents are central to providing support and containment for their anxiety during admission. Empowering parents to be part of their child's recovery process in hospital can help build parental skills and confidence in their ability to feed their child. This supports parents' readiness to continue this process once the child is medically fit for discharge, reducing potential barriers to discharge. Mental Health Teams can support this process by providing supportive sessions to parents during admission to contain parental anxiety, provide ongoing psychoeducation regarding their child's illness, and provide sessions to increase parental skills in feeding their child.

4. Participation in Multidisciplinary Team (MDT) meetings

Mental health team representatives are recommended to attend weekly MDT meetings with paediatric, nursing and dietitian colleagues in relation to all children and adolescents admitted

with eating disorders. This will support the provision of a holistic and consistent multidisciplinary approach with shared decision making which in turn helps reduce anxiety for children and families while improving engagement. Family members are encouraged to contribute to the MDT and be provided with feedback on their child's care plan. Weekly MDT meetings are recommended to incorporate the MEED risk assessment framework which includes an assessment of a child's insight and engagement with the treatment plan along with the presence or absence of self- harming behaviours.

5. Risk Management

The primary role of admission to acute paediatric services is medical stabilisation. However additional risks related to anorectic thoughts, feelings and behaviours may be present prior to admission, or emerge in the paediatric setting. These may include non-compliance with treatment plans, episodes of aggression, or self-harming behaviours and other behavioural manifestations of eating disorders. Mental Health Teams have an important role in supporting the multi-disciplinary team in risk management, through prevention, or appropriate responses to same.

a) Young person's non-compliance with treatment plans

Engaging in refeeding can trigger intense anxiety for the young person with Anorexia Nervosa. Mental Health Teams may provide input and interventions to the young person, for example to manage anxiety associated with meals and the process of refeeding.

For some young people however, the intensity of their anorectic thoughts and feelings can prevent them from engaging with the multidisciplinary approach. Regarding restriction, a well-planned dietary plan, with support and supervision from parent/HCA special observer increase the likelihood of the young person increasing oral intake. Where the young person is unable to comply with meals plans, ONS orally and potentially via nasogastric feeding may be required. The prospect of nasogastric feeding in particular can be very anxiety provoking for the young person, and may trigger threats of non- compliance with nasogastric tube insertion or feeding, aggression or self-harm. Along with all team members, Mental Health clinicians have a role in explaining that insertion of a nasogastric tube is not a punitive action, but is a support for the young person when the illness is too strong for them to overcome at this time.

Psychiatry can consult with paediatric colleagues and parents regarding anxiolytic medication, which may assist the young person at this time to engage with refeeding, by reducing the intensity and impact of anorectic cognitions. There is scant literature on the use of psychotropic medication during refeeding, and there are medical problems that could arise when a dose of a sedative drug is given to a young person who is severely nutritionally compromised.

Olanzapine (off label indication) has been used in this cohort of young people with some evidence of benefit in weight restoration (Madden et al, 2015), and is a potential agent to be considered under the direction of a consultant child and adolescent psychiatrist.

Mental Health Teams may identify and treat a relevant co-morbid mental health disorder which may be impacting on medical stabilisation or engagement with treatment plans such as an associated depression or other mental health disorder.

As outlined in the nursing care section, the provision of supervision and clear treatment plans can reduce the opportunity of the illness to cause the young person to engage in alternative weight control, such as hiding food, or engaging in covert exercise. Limiting bathroom access after meals and provision of levels of bathroom supervision agreed with parents can reduce these risks.

b) Parental engagement with care plans

Parents too can be faced with overwhelming fear of the illness and its impact on the child, in particular during a paediatric admission. The complexity of multidisciplinary care and wide range of professionals involved, increases the risk of parents becoming overwhelmed, or experiencing inconsistent communications from staff regarding their child's care plan. Parents can often identify with a child's anxiety or pleadings for less or different foods, or ability to exercise, and at times struggle with the paediatric care plan. The multidisciplinary team is central to supporting parents at these times, providing a cohesive approach for parents, and a process to ensure all questions or queries about the care-plan can be discussed, explained and agreed with parents. Although all multidisciplinary team members share this role and responsibility, for parents who may themselves be experiencing significant anxiety or distress, Mental Health Teams may have additional skill sets in communicating, understanding and supporting parents at these times.

c) Self-harm or aggressive behaviours

When young people are unable to restrict in response to their anorectic thoughts, many young people will experience anger and distress. This can be understood as part of the sympathetic nervous response of 'fight or flight' response to a feared stimuli. This may result in verbal or less commonly physical aggression to parents /carers /staff, or suicidal thoughts or behaviours. A risk assessment at the time of admission will assist paediatric services in proactive risk management to ascertain if these difficulties have arisen prior to admission, and help identify any known helpful risk management strategies. When these challenges arise during a paediatric admission, Mental Health Teams can provide an urgent risk assessment and management advice to paediatric services. This may include assessment of the child by identifying triggers for self-harm or aggression, and to identify risk reduction strategies such as anxiety management for the child or provision of additional parental skills training to parents in safely responding to their child's distress in a supportive and caring manner.

Mental Health Teams may liaise with nursing staff on the ward regarding possible environmental safety actions. Consideration of whether increased supervision on the ward setting via additional staff is required, should occur between the MDT and young person's parents. Bathroom supervision in the context of an identified risk of self-harm should be discussed with parents, and a level of supervision agreed that protects both the child's right to dignity while also maintaining their safety. Child and adolescent psychiatry may also consider prescription of psychoactive medication, such as olanzapine with parental consent. If despite all of the above measures, the young person continues to present with self-harm or aggressive behaviours, Mental Health Teams may then consider liaison with inpatient CAMHS providers, as the young person may require transfer to an inpatient CAMHS setting.

6. Mental Health Teams supporting Multidisciplinary Care

Where there is onsite paediatric liaison services, Mental Health Teams will form an integral part of the multidisciplinary team providing care to the young person and family during their paediatric admission. For paediatric services with regional eating disorder teams, the teams can provide in reach support to the multidisciplinary team. In addition to the roles described above, Mental Health Teams can support their paediatric colleagues by providing ongoing psychoeducation as to the psychological and systemic impacts of anorexia nervosa, and its impact on treatment. Mental Health Teams can support multidisciplinary team members by acknowledging the frustration and anxiety caring for young people with eating disorders can cause for paediatric providers, especially if a young person, and/or family, do not readily engage with available or recommended treatment.

Mental Health Teams are ideally placed to support paediatric providers in remembering that the strength of the illness for a child means that refusal to comply, or challenging behaviours on the ward setting are not simply 'disrespect' for staff or 'bad behaviours', but a function of the fear and distress this illness causes. Staff need support to recognise a child's ambivalence towards treatment, avoid confrontation, gain trust and work collaboratively with the patient, their family members and carers, to help the patient through the illness. Mental Health Teams can play an invaluable role in supporting multidisciplinary colleagues in this process, even in challenging circumstances.

7. Discharge Planning

A central tenant to paediatric care is discharge to onward care providers as soon as medically stable. In line with the HSE Model of Care, CAMHS providers are the primary services to provide ongoing care for young persons with anorexia nervosa. Ideally, discharge planning should be part of the care plan for a young person from the time of admission. Whether the paediatric service has onsite mental health provision, in-reach support from an eating disorder team, or support from local CAMHS services, the CAMHS service who will provide care on discharge should engage with the young person's multidisciplinary team either during or around each MDT meeting. The CAMHS team at this time can receive updates from the team, support paediatric treatment when possible, and ensure readiness for follow-up on discharge from paediatric services. If a young person requires referral or transfer to a CAMHS inpatient unit, it is the role of the mental health team (PLS /eating disorder team or CAMHS) to discuss same with the child's parents, confirm consent, and complete the referral process for same.

For paediatric services with onsite psychiatric provision, the PLS will provide a psychiatric discharge report to the onward CAMHS provider regarding the young person's admission, and copy same to the young person's GP.

SECTION 8:
CHILD WELFARE OR PROTECTION CONCERNS

In some cases a referral may be considered and/or made to TUSLA about child welfare / protection concerns. This will be completed by the mental health social worker if a part of the PLS team, if not the medical social worker has a role in referring to and communicating with this agency. On occasion TUSLA or other agencies will be invited to meetings in the hospital in relation to the child and family. The mental health / medical social worker may co-ordinate these interagency meetings. (Please see **Appendix 15** for information on the Mental Health Act).

SECTION 9: REFERENCES

1. American Dietetic Association (2011) Position of the American Dietetic Association: nutrition intervention in the treatment of eating disorders J Am Diet Assoc 111: 12361241
2. American Psychiatric Association (2006) American Psychiatric Association Practice Guidelines for the Treatment of Psychiatric Disorders: Compendium 2006. Arlington: American Psychiatric Publishing, 2006.
3. American Psychiatric Association (2013) Diagnostic and Statistical Manual of Mental Disorders (DSM- V), 5th edition Arlington, V.A: American Psychiatric Association
4. American Society for Parenteral and Enteral Nutrition (2015) The A.S.P.E.N. Pediatric Nutrition Support Handbook, 2nd Edition Silver Spring: USA
5. Arden M.R., Weiselberg E.C., Nussbaum M.P., et al. (1990) Effect of weight restoration on the dyslipoprtoeinemia of anorexia nervosa J Adolesc Health 11:199-202
6. Carney C.P, Andersen A.E. (1996) Eating Disorders. Guide to medical evaluation and complications Psychiatr Clin North Am 657-679
7. Connor, G., Nicholls, D. (2020) "Eating Disorders" in Clinical Paediatric Dietetics, 5th Edition. Wiley-Blackwell, pg. 393-405
8. Eating Disorders: Guide to Assessment and Management in Primary Care. Available at https://www.icgp.ie/go/library/catalogue/item?spId=90C5A8DF-F7A5-4A87-A942CE54E3B16EF6
9. Eating Disorder Services: HSE Model of Care for Ireland. Available at https://www.hse.ie/eng/services/list/4/mental-health-services/national-clinical-programme-for-eating-disorders/ed-moc.pdf
10. Fryar CD, Carroll MD, Gu Q, Afful J, Ogden CL. Anthropometric Reference Data for Children and Adults: United States, 2015-2018. Vital Health Stat 3. 2021 Jan;(36):1-44. PMID: 33541517.
11. Katzman, D.K., 2016. Neinstein's adolescent and young adult health care: a practical guide. Lippincott Williams & Wilkins.
12. Le Grange.D., Doyle P., Swanson S.A., Ludwig K., Glunz C., Kreipe R.E. (2012) Calculation of Expected Body Weight in Adolescents with Eating disorders Pediatrics.129 (2), e438-e446
13. Lund B.C., Hernandez E., Yates W., Mitchell J., McKee P., Johnson C. (2009) Rate of inpatient weight restoration predicts outcome in anorexia nervosa Int J Eat Disord 42:301-05
14. Madden S, Miskovic-Wheatley J, Wallis A, et al. (2015) A randomized controlled trial of in-patient treatment for anorexia nervosa in medically unstable adolescents. Psychol Med 2015; 45:415–427.
15. McClave S.A., Heyland D.K. The physiologic response and associated clinical benefits from provision of early enteral nutrition Nutr Clin Pract 2009; 24(3):305-315
16. Mental Health Act, 2001. Available at https://www.irishstatutebook.ie/eli/2001/act/25/section/25/enacted/en/html#:~:text=Involuntary%20admission%20of%20children.&text=(b)%20the%20child%20requires%20treatment,child%20in%20an%20approved%20centre.

17. Mehesh C, Riaram K, Lakshmiprabha V. Extended Indications for enteral nutritional support Nutrition 2000; 16:129-130

18. National Institute for Health and Clinical Excellence (2017). Eating Disorders: recognition and treatment. London: National Collaborating Centre for Medical Health, 2017. Available online: https://www.nice.org.uk/guidance/ng69

19. North York General Hospital Child and Teen Inpatient Unit Policy Manual. Protocol for Eating Disorders Inpatients, December 2015.

20. Ministry of Health. Clinical Practice Guidelines for the BC Eating Disorders Continuum of Services. Available online: http://mh.providencehealthcare.org/sites/default/files/BC%20Eating%20Disorders%20Clinical%20Practice%20Guidelines.pdf.

21. O' Connor G., Nicholls D., Hudson L., Singhal A. (2016) Refeeding Low Weight Hospitalised Adolescents with Anorexia Nervosa: A Multicentre Randomised Controlled Trial Nutr Clin Pract. Pii: 0884533615627267

22. RCPsych (2022) Guidance on Recognising and Managing Medical Emergencies in Eating Disorders (Replacing MARSIPAN and Junior MARSIPAN) Annexe 1: Summary sheets for assessing and managing patients with severe eating disorders https://www.rcpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/college-reports/college-report-cr233---annexe-1

23. RCPsych (2022) Guidance on Recognising and Managing Medical Emergencies in Eating Disorders (Replacing MARSIPAN and Junior MARSIPAN) Annexe 3: Type 1 diabetes and eating disorders (T1DE) https://www.rcpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/college-reports/college-report-cr233---annexe-3.pdf?sfvrsn=c45bd860_14

24. RCPsych (2012) Junior MARSIPAN: Management of Really Sick Patients under 18 with Anorexia Nervosa (CR 168).

25. Reiter CS, Graves L. Nutrition Therapy for Eating Disorders. Nutrition in Clinical Practice. 2010; 25(2):122-36.

26. Royal Australian and New Zealand College of Psychiatrists, Clinical Practice Guidelines Team for Anorexia Nervosa (2004) Australian and New Zealand clinical practice guidelines for the treatment of anorexia nervosa. Aust. N. Z. J. Psychiatry. 2004; 38:659–670. doi: 10.1080/j.1440-1614.2004.01449.x.

27. Scientific Advisory Committee on Nutrition (2011). Dietary Reference Values for Energy. TSO, London 2011

28. SickKids Inpatient Eating Disorder Protocol, The Hospital for Sick Children, Toronto, Canada

29. SickKids Inpatient Refeeding Protocol, The Hospital for Sick Children, Toronto, Canada

30. The Society for Adolescent Health and Medicine. Position Paper of the Society for Adolescent Health and Medicine: Medical Management of Restrictive Eating Disorders in Adolescents and Young Adults. Journal of Adolescent Health. Volume 56, Issue 1, p121-125, January 2015 https://doi.org/10.1016/j.jadohealth.2014.10.259

31. Williams C., Bodella M. and Wynder E. (1995) A new recommendation for dietary fibre in childhood Pediatrics 96: 985-988

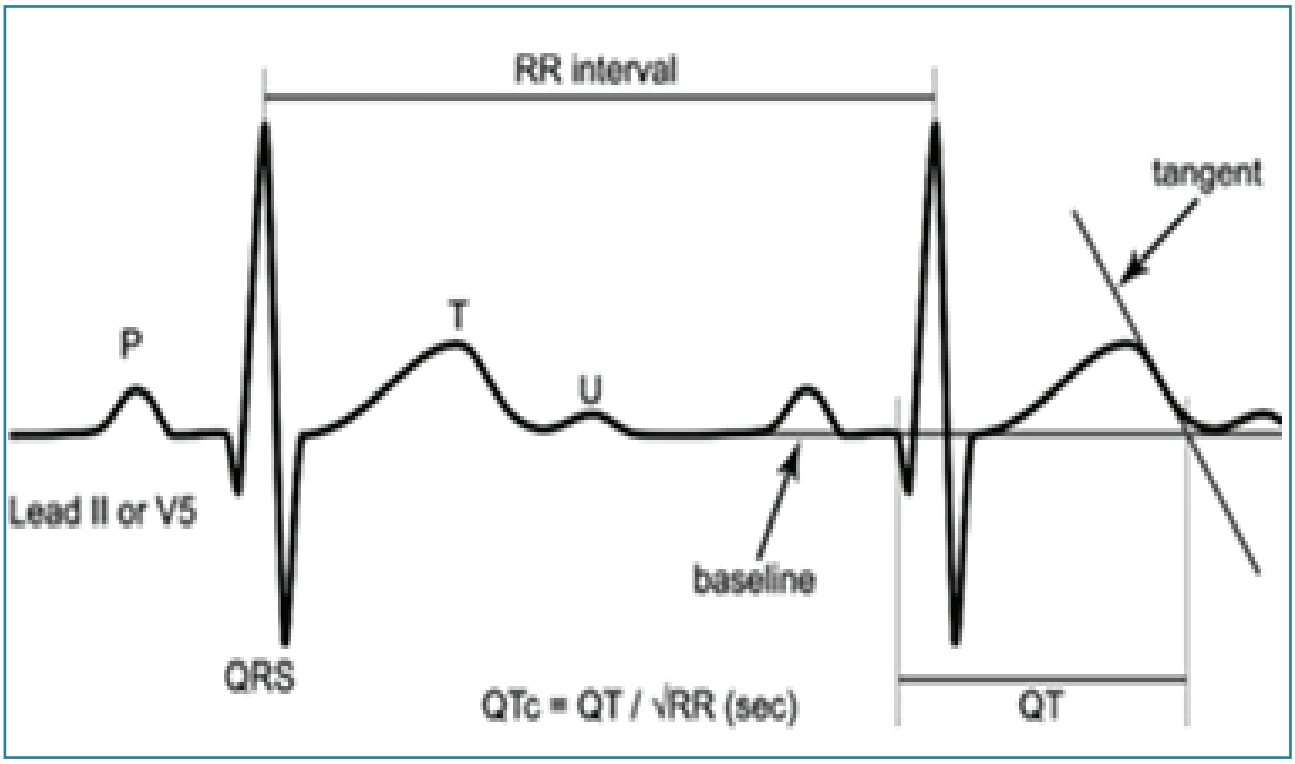
32. Williamson MA, Snyder LM eds. Wallach's Interpretation of Diagnostic Tests. 9th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2011

33. World Health Organization. *International statistical classification of diseases and related health problems* (11th ed.) https://www.who.int/standards/classifications/classification-of-diseases

SECTION 10:
APPENDIX 1

MANUAL CALCULATION OF THE QTC

The QTC is calculated by measuring the number of small squares from the very start of the Q wave. A tangent is drawn to the steepest slope of the last limb of the T wave in lead II or V5 (see diagram below). The end of the T wave is the intersection of the tangent with the baseline. The QT time is measured from the very start of the Q wave to the intersection point (see diagram below). The number of small squares is multiplied by 0.04 to give the QT time in milliseconds. The QT time is then corrected by dividing it by the square root of the RR interval. The RR interval is the number of small squares between two R waves in two consecutive QRS complexes, multiplied by 0.04. Thus QTc = QT / √RR.



< 15 years (males and females) an abnormal is QTc is > 460 ms

>15 years an abnormal is QTc is > 450 ms in males and > 460 ms in females (Hudson and O'Connor, 2015)

If prolonged QTc due to malnutrition, the patient requires a repeat ECG once weight restored.

APPENDIX 2:

RISK ASSESSMENT FRAMEWORK – PLEASE CIRCLE AND DISCUSS WITH SENIOR CLINICIAN

(Adapted from Medical Emergencies in Eating Disorders (MEED) 2022)

	RED High risk	AMBER Alert to high concern	GREEN Low risk
1. % Median BMI	*<70%	70-80%	>80%
2. Recent Weight Loss	*≥ 1 kg/wk. x 2 wks. (consecutive) in an undernourished patient Rapid weight loss at any weight	0.5–0.99 kg/wk. x2wks (consecutive)	≤0.5 kg/wk. or fluctuating weight
3. HR	*HR (awake) <40bpm	HR (awake) 40-50bpm	HR (awake) >50bpm
4. BP Syncope	*Standing systolic BP <0.4th centile (84-98mmHg) with recurrent syncope	Standing systolic BP <0.4th centile (84-98mmHg) with occasional syncope	Normal standing systolic BP for age and gender
Orthostatic changes**	Orthostatic ↓ in systolic BP ≥20mmHg or Orthostatic ↑ in HR >35 bpm	Orthostatic ↓ in systolic BP ≥15mmHg or Orthostatic ↑ in HR ≤35 bpm	Normal orthostatic cardiovascular changes Normal heart rhythm
5. ECG	*QTc > 460ms (F) *QTc > 450ms (M) and *Any other significant ECG abnormality	QTc > 460ms (F) QTc > 450ms (M) and No other ECG anomaly Taking medication known to prolong QTc	QTc < 460ms (F) QTc < 450ms (M)
6. Hydration Status	Fluid refusal Severe dehydration (10%): *↓urine output, dry mouth, decreased skin turgor, postural BP drop (see above), sunken eyes, tachypnoea, tachycardia	Severe fluid restriction Mod. dehydration (5–10%): ↓urine output, dry mouth, normal skin turgor, postural BP drop (see above) some tachypnoea, Some tachycardia, peripheral oedema	Minimal fluid restriction Mild dehydration (<5%): may have dry mouth or concerns about risk of dehydration with negative fluid balance
7. Temperature	*<35.5°C tympanic or 35.0°C axillary	<36°C	≥36°C

8. Biochemistry	*↓K (<2.5mmol/L), *↓PO4, ↓Na,↓Ca, ↓Alb, *↓Gluc (<3mmol/L), *Transaminases >3xNormal		
9. Haematology	Low white cell count Haemoglobin <10g/L		
10. Disordered eating behaviours Purging	*Acute food refusal, or est. intake < 500kcal/d for >2days. *Multiple daily episodes of vomiting and/or laxative abuse	Regular (>= 3/week) vomiting and/or laxative use	
11. Engagement with management plan	Violence (parent or child) Harm to self Poor insight Fear leading to resistance to weight gain Staff or parents/carers unable to implement meal plan prescribed	Poor insight Resistance to weight gain Fear leading to some ambivalence but not actively resisting Staff or parents/carers unable to implement meal plan prescribed	Some insight May be ambivalent but not actively resisting
12. Activity & exercise	High level dysfunctional exercise >2 hours a day (in the context of malnutrition)	Moderate levels of dysfunctional exercise >1 hour per day (in the context of malnutrition)	Mild levels of or no dysfunctional exercise <1 hour per day (in the context of malnutrition)
13. Mental Health	Self-harm, *suicidal ideas with moderate to high risk of completed suicide	Self-harm, suicidal ideas with low risk of completed suicide	
14. SUSS test (Sit-up, squat- stand test)***	*Unable to sit up at all from lying flat Unable to get up at all from squat or only by using upper limbs (Score 0-1)	Unable to sit up or stand from squat without noticeable difficulty (Score 2)	Able to sit up from lying flat and stand from squat with no difficulty (Score 3)
15. Other Clinical State	Life-threatening medical condition, e.g. severe haematemesis, acute confusion, severe cognitive slowing, diabetic ketoacidosis, upper gastrointestinal perforation, significant alcohol consumption	Non-life-threatening physical compromise, e.g. mild haematemesis, pressure sores	Evidence of physical compromise, e.g. poor cognitive flexibility, poor concentration
Total number of risk factors	**High Risk:**	**Alert to High Concern:**	**Low Risk:**

* Checklist of 'lightbulb' signs indicating increased severity of presentation (see table on next page)

**Measurement of Orthostatic Vitals: Sit the patient down for 5 mins and check HR & BP = Sitting Measurement. Stand them up for 3-5 mins and recheck HR & BP = Standing Measurement

***Sit Up Squat Stand Test: Patient lies flat on the floor & sits up without, if possible, using their hands = Sit Up

Patient squats down on haunches & stands up without, if possible, using arms as levers = Squat Stand

Key Parameters:							
BP: Sitting Standing		HR: Sitting Standing		Temp:		RR:	
Weight (kg):		Height (m):		BMI:		%median BMI	

Overall Risk Assessment: **High / Medium / Low**

Outcome: Admit / Discharge to GP and CAMHS / Transfer to inpatient CAMHS unit

Completed by:_____

Discussed with: _____ **Date:** _____

50th centile BMI values (Please circle and discuss)

Age (years)	Male	Female
9	**16.037**	**16.399**
9.25	16.125	16.515
9.5	16.219	16.637
9.75	16.318	16.765
10	**16.423**	**16.898**
10.25	16.533	17.036
10.5	16.648	17.179
10.75	16.768	17.327
11	**16.892**	**17.478**
11.25	17.02	17.634
11.5	17.154	17.793
11.75	17.291	17.954
12	**17.433**	**18.117**
12.25	17.579	18.281
12.5	17.729	18.446
12.75	17.881	18.61
13	**18.037**	**18.772**
13.25	18.194	18.932
13.5	18.354	19.09
13.75	18.514	19.244
14	**18.675**	**19.395**
14.25	18.836	19.542
14.5	18.997	19.684
14.75	19.158	19.822
15	**19.317**	**19.955**
15.25	19.475	20.083
15.5	19.632	20.206
15.75	19.786	20.324
16	**19.938**	**20.438**
16.25	20.087	20.547
16.5	20.234	20.652
16.75	20.378	20.751
17	**20.519**	**20.847**
17.25	20.656	20.938
17.5	20.791	21.026
17.75	20.923	21.11
18	**21.052**	**21.19**
18.25	21.178	21.267
18.5	21.301	21.342
18.75	21.422	21.413
19	**21.54**	**21.482**
19.25	21.655	21.548
19.5	21.768	21.612
19.75	21.878	21.674
20	**21.986**	**21.735**

BMI = Weight kg/ (Height m^2)

% median BMI =

Actual BMI x 100 (divided by)
50th centile BMI for age & gender

***Checklist of 'lightbulb' signs indicating increased severity of presentation:**

History
Rapid weight loss
Acute food refusal
Frequent vomiting
Muscle weakness
Faints, chest pain, short of breath
Little urine output
Intractable constipation
Suicidal thoughts

Examination
% median BMI <70
HR <40
Postural hypotension with recurrent syncope
Core temp <35.5°C
Muscle weakness

Investigations
Any significant ECG abnormality
Hypokalaemia
Hyponatraemia
Urine SG <1.010
Hypophosphataemia
Raised transaminases
Hypoglycaemia

Measurement of height and weight:
Remove shoes
In light clothing
Post voiding urine

APPENDIX 3

INSTRUCTIONS FOR PARENTS ON DISCHARGE FROM THE EMERGENCY DEPARTMENT

Based upon a detailed medical assessment your child is being discharged to the care of their GP with a recommendation that they refer them to the Child and Adolescent Mental Health Service (CAMHS).

Please follow up with your GP as soon as possible (within 1 week ideally).

Please return to the Emergency Department if you think your child is getting sicker.

What things to look out for:

- Rapid weight loss
- Acute food refusal
- Frequent vomiting
- Muscle weakness
- Fainting
- Chest pain
- Shortness of breath
- Little urine output
- Severe constipation
- Suicidal thoughts

APPENDIX 4

EDUCATIONAL RESOURCES FOR PATIENTS AND FAMILIES

1. **HSE National Clinical Programme for Eating Disorders Self Care and Information App**: https://www.hse.ie/eng/about/who/cspd/ncps/mental-health/eating-disorders/news/

2. **Bodywhys website:**

   Bodywhys is the Eating Disorders Association of Ireland and they have lots of great resources.

   https://www.bodywhys.ie/supporting-someone/resource-for-parents/

   The PILAR Programme from Bodywhys provides education and support for families https://www.bodywhys.ie/supporting-someone/pilar-programme-for-families/

3. **Kelty Mental Health eating disorders meal support educational videos**

   http://www.youtube.com/watch?v=SnyIF750w5U&list=PL21D7E85D804263B2

   These 6 short videos (35 minutes in total) are focused on meal planning, preparation, during the meal and post-meal support and they fit quite nicely with the FBT model. (Please open link on a personal phone/laptop as most institutions block You Tube).

   They were developed by this service in Canada:

   https://keltyeatingdisorders.ca/" Home - Kelty Eating Disorders

4. **The F.E.A.S.T. Family Guide Series:**

   American project that makes evidence based information booklets for families caring for someone with an eating disorder.

   The booklets are free to download at https://www.feast-ed.org/family-guide-series/

5. **Book: "Help Your Teenager Beat an Eating Disorder" by James Lock & Daniel Le Grange.**

   Drs. Lock and Le Grange developed the FBT Model and have written this book for parents

APPENDIX 5

Dietetic Guidelines for Patients with Anorexia Nervosa Admitted Out of Hours who weigh <35kg

- Check baseline weight: ideally pre-breakfast, post voiding, in light clothing only
- Document all food and drinks offered and consumed on food record charts
- Document all inputs and outputs on fluid balance chart
- If patient unable to tolerate choice, parents to advise on preferred foods pre-morbidly
- Allow 15mins to complete snacks and 30mins to complete main meals
- Offer food first and then Fortisip Compact orally if required as below
- All food and Fortisip Compact to be removed from packaging before serving
- No changes to be made to this meal plan until reviewed by the Dietitian.

Breakfast		Fortisip Compact
08:30am	Cereal 45g + 200mls of full fat milk **OR** 40g porridge made with full fat milk 200mls DRINK: 1 glass of juice and 1 x glass of water	If 0% meal eaten: 125ml If 25% meal eaten: 95ml If 50% meal eaten: 65ml If 75% meal eaten: 30ml
Lunch		**Fortisip Compact**
12:30pm	Small chicken breast **OR** 2 slices of meat **OR** 2 eggs **OR** serving spoon of beans + 1 serving spoon of vegetables + 1 scoop of potato/pasta/rice **OR** sandwich and soup DRINK: 2 x glasses of water	IIf 0% meal eaten: 125ml If 25% meal eaten: 95ml If 50% meal eaten: 65ml If 75% meal eaten: 30ml
Mid-afternoon snack		**Fortisip Compact**
14:30pm	DRINK: 2 x glasses of water	Not required
Evening meal		**Fortisip Compact**
16:30pm	Main meal: to include chicken/meat/fish + 1 serving spoon of vegetables + 1 x scoop of potato/pasta/rice **OR** 1 x sandwich *Optional: pasta dish available DRINK: 2 x glasses of water	If 0% meal eaten: 125ml If 25% meal eaten: 95ml If 50% meal eaten: 65ml If 75% meal eaten: 30ml
Evening snack		**Fortisip Compact**
18:30pm	2 x digestive biscuits **OR** 20g cheese + 2 x crackers DRINK: 2 x glasses of water	If 0% snack eaten: 65ml If 25% snack eaten: 45ml If 50% snack eaten: 30ml If 75% snack eaten: 15ml
Supper snack		**Fortisip Compact**
20:30pm	Toast x1 slice with butter x 1 pat **OR** hot chocolate (made with 150mls full cream milk) DRINK: 2 x glasses of water	If 0% meal eaten: 65ml If 25% meal eaten: 45ml If 50% meal eaten: 30ml If 75% meal eaten: 15ml

- Dairy allergyis only accommodated if it pre-dates the eating disorder. the eating disorder, in which case sweetened soya milk should be ordered. Discuss with Consultant & Dietitian.

APPENDIX 6

Dietetic Guidelines for Patients with Anorexia Nervosa Admitted Out of Hours who weigh >35kg

- Check baseline weight: ideally pre-breakfast, post voiding, in light clothing only
- Document all food and drinks offered and consumed on food record charts
- Document all inputs/outputs on fluid balance chart
- If patient unable to tolerate choice, parents/carer to advise on preferred foods pre-morbidly
- Allow 15mins to complete snacks and 30mins to complete main meals
- Offer food first and then Fortisip Compact orally if food refused
- All food and Fortisip Compact to be removed from packaging before serving
- No changes to be made to this meal plan until reviewed by the Dietitian.

Breakfast		Fortisip Compact
08:30am	Cereal 45g + 200mls of full fat milk **OR** 40g porridge made with full fat milk 200mls DRINK: 1 glass of juice and 1 x glass of water	If 0% meal eaten: 125ml If 25% meal eaten: 95ml If 50% meal eaten: 65ml If 75% meal eaten: 30ml
Mid-morning snack		**Fortisip Compact**
10:30pm	1 x 125g Yoghurt **OR** 2 x Petit Filous + fruit pot **OR** piece of fruit DRINK: 2 x glasses of water	IIf 0% meal eaten: 65ml If 25% meal eaten: 45ml If 50% meal eaten: 30ml If 75% meal eaten: 15ml
Lunch		**Fortisip Compact**
12:30pm	Small chicken breast **OR** 2 slices of meat **OR** 2 eggs **OR** serving spoon of beans + 1 serving spoon of vegetables + 1 scoop of potato/pasta/rice **OR** sandwich and soup DRINK: 2 x glasses of water	IIf 0% meal eaten: 125ml If 25% meal eaten: 95ml If 50% meal eaten: 65ml If 75% meal eaten: 30ml
Mid-afternoon snack		**Fortisip Compact**
14:30pm	150ml of smoothie **OR** piece of fruit + small bag (~15g) of popcorn/crisps DRINK: 2 x glasses of water	If 0% meal eaten: 65ml If 25% meal eaten: 45ml If 50% meal eaten: 30ml If 75% meal eaten: 15ml
Evening meal		**Fortisip Compact**
16:30pm	Main meal to include chicken/meat/fish + 1 serving spoon of vegetables + 1 x scoop of potato/pasta/rice **OR** 1 x sandwich *Optional: pasta dish available DRINK: 2 x glasses of water	If 0% meal eaten: 125ml If 25% meal eaten: 95ml If 50% meal eaten: 65ml If 75% meal eaten: 30ml
Evening snack		**Fortisip Compact**
18:30pm	2 x digestive biscuits **OR** 125g yoghurt **OR** 1 x 20g cheese + 2 x crackers DRINK: 2 x glasses of water	If 0% snack eaten: 65ml If 25% snack eaten: 45ml If 50% snack eaten: 30ml If 75% snack eaten: 15ml
Supper snack		**Fortisip Compact**
20:30pm	Toast x1 slice with butter x 1 pat **OR** hot chocolate (made with 150mls of full fat milk) DRINK: 2 x glasses of water	If 0% meal eaten: 65mls If 25% meal eaten: 45ml If 50% meal eaten: 30ml If 75% meal eaten: 15ml

- Dairy allergy is only accommodated if it pre-dates the eating disorder, in which case sweetened soya milk should be ordered. Discuss with Consultant & Dietitian.

APPENDIX 7

REFEEDING SYNDROME AND ITS TREATMENT

REFEEDING SYNDROME

Although rarely critical, refeeding syndrome is a serious potential complication of commencing feeding in children and young people who have experienced starvation. Patients are at the highest risk in the first 2-5 days after the initiation of refeeding, with late refeeding syndrome potentially occurring at 7-10 days.

Refeeding syndrome is characterised by biochemical abnormalities **AND** clinical findings. For most children and young people, the most significant finding will be a fall in phosphate. When undernourished patients are refed, there is an increased requirement for phosphate as the body switches back to carbohydrate metabolism, which can be potentiated by a background of relative phosphate depletion in starvation. Phosphate levels in the blood begin to fall, and cardiovascular and neurological sequelae may follow.

The most important factor is anticipating and remaining vigilant for biochemical and clinical features of the refeeding syndrome, especially in the first 48 hours, and then first five days of initiating feeding. Refeeding syndrome if identified early allows early intervention and prevention of escalation. Low phosphate will correct when treated with oral phosphate.

WHO IS MOST AT RISK?

In theory, any child or adolescent who has experienced recent starvation is at risk, and therefore all such children should be monitored. Greater risk is however thought to occur in children with:

- Very low weight: MEED defines low weight as <70% median BMI (red) or <0.4th centile BMI on the UK WHO Growth Chart, or between 70 and 80% median BMI (amber)
- Faster rates of weight loss: recent loss of weight of 1kg or more/week for two consecutive weeks (red) or loss of weight of 500g-999g/week for two consecutive weeks (amber) or >15% of body weight in 2-4 weeks.
- Minimal or no feeding prior to admission, or before commencing refeeding, defined as acute food refusal or estimated calorie intake <500 kcal/day for over 2 days (red). If either is in combination with vomiting or laxative misuse this will increase the risk.
- Previous history of refeeding syndrome.
- Neutropenia (low white cell count) on full blood count (FBC).
- Abnormal electrolytes (phosphate, potassium, magnesium) prior to refeeding.

Important considerations prior to commencing feeding

The Medical Consultant and Nurse in Charge should be notified at the time of admission about all patients considered to be at risk of refeeding syndrome, and they will flag the patient with the out of hours team at handover.

All patients should have biochemistry checked as soon as is possible on the day of admission. Abnormalities should be discussed with the Medical Consultant on the day of admission. It is important to closely monitor correct electrolyte disturbances whilst commencing feeding, as patients with abnormal electrolytes are at higher risk of developing refeeding syndrome.

Treatment of hypophosphataemia:

A low phosphate (< age-related local reference range) before initiating feeds is unusual and should be corrected as soon as is possible on the day of admission:

- Low phosphates should be discussed with the responsible consultant
- For patients aged 5-17 years give 2-3 mmol/kg daily in 2-4 divided doses in the form of Phosphate Sandoz® (each tablet contains 16.1mmol Phosphate, 20.4mmol Sodium, 3.1mmol Potassium). Max 97mmol/ day. Dose to be adjusted as necessary. (see CHI Paediatric Formulary)
- Recheck biochemistry in 12 hours and monitor clinically (see below)
- Do not make any increases on the feeding regime until phosphate has been corrected
- If phosphate is still low at 12 hours then consider repeated double dose, or IV correction - this is unusual
- Low phosphate levels prior to commencing feeding are unusual. Therefore other causes of low phosphate should be excluded –check PTH and Vitamin D with next set of bloods. These bloods should not hold up commencing of feeding once phosphate is normalised.
- If phosphate is significantly low (<0.5 mmol/L) consider IV replacement
- Phosphates that are potentially dangerously low (<0.3 mmol/L) should be managed in PICU and discussions should occur with the consultant and nurse managers about transfer before commencing feeding.

Monitoring for refeeding syndrome

All patients considered at risk of refeeding syndrome should be monitored for clinical signs of the refeeding syndrome:

- Resting tachycardia (differential for this includes anxiety)
- Oedema or swelling, especially in the legs
- Confusion or altered conscious state (always check glucose in this case).

Patients should have:

- Daily inspection for any signs of oedema (in particular peripheral oedema) for first five days
- Four times/day resting pulse and lying and standing blood pressure for first five days
- Monitor for biochemical/blood parameters of the refeeding syndrome: the drop in phosphate seen when refeeding will normally occur within 48-72 hours.
- Blood sugars should not be measured routinely unless there is clinical evidence of hypoglycaemia (confusion, decrease in conscious level, acutely abnormal behaviours consistent with hypoglycaemia) or hyperglycaemia (positive dipstick on urine, passing urine frequently or excess thirst)
- Attention should be paid to other electrolytes such as Na, K, Mg and Ca. Discussions about abnormalities in these blood parameters and how to treat them should be discussed with the Medical Consultant.

Attention: When checking electrolytes and a full blood count, fill the biochemistry vial before the haematology vial. This is very important, as contamination of blood with EDTA (which is found in haematology vials) can cause false electrolyte abnormalities.

TREATMENT OF REFEEDING SYNDROME

Refeeding syndrome will usually present in on one of two clinical scenarios:

Low phosphate but no clinical signs of the refeeding syndrome (most common scenario)

- The responsible consultant and medical registrar should be informed.
- Keep feeding regime the same, **DO NOT INCREASE CALORIES UNTIL PHOSPHATE NORMALISED**. (Additional calories may potentiate or drive the refeeding syndrome)
- Identify other electrolyte abnormalities (see below – note these are rare in this context).

If phosphate is < age-related local reference range but >0.5 mmol/L:

- If phosphate has not already been commenced prior to feeding prescribe 2-3 mmol/kg daily in 2-4 divided doses in the form of Phosphate Sandoz® Max 97mmol/ day.
- If phosphate has already been commenced increase dose orally or consider need for IV
- Recheck U&E in six to eight hours and monitor clinically (see above).

If phosphate is significantly low (<0.5 mmol/L) or still low 6 to 8 hours following correction then consider repeated double dose, or IV correction. This is unusual. Discuss with consultant, registrar and nurse manager. Repeat ECG (Prolongation of the QTc may have developed or other arrhythmia)

Patients with phosphates <0.3 mmol/L in the context of the refeeding syndrome should be transferred to PICU for ongoing management and cardiac monitoring.

If this clinical scenario is suspected, then discussion should occur with the consultant and nurse managers about transfer to PICU depending on severity of clinical findings

Note the finding of resting tachycardia alone should prompt a medical review, check of electrolytes, ECG and careful monitoring in the first instance with consideration of other causes for tachycardia (e.g. anxiety). **DO NOT INCREASE FEEDS UNTIL REFEEDING SYNDROME HAS BEEN EXCLUDED.**

Clinical signs of significant refeeding syndrome: a combination of oedema, confusion, resting tachycardia and usually low phosphate (usually low but may be normal)

Management of clinically evident refeeding syndrome:

- Should be transferred (when stable) for ongoing management in PICU
- Reduce feeds to starting dosage (calories on admission) as additional calories may potentiate or drive the refeeding syndrome
- Immediately check: U&E (Sodium, Potassium, Magnesium, Phosphate, Calcium), LFTs; check blood gas for measurement of acid-base and FBC
- Check blood sugar and treat hypoglycaemia
- Patient should be put on a cardiac monitor, especially those with cardiac arrhythmia and electrolyte abnormalities
- Patients with an arrhythmia should be discussed with the Cardiology Service as soon as possible.

Correct electrolyte disturbances – this should generally be done intravenously in the PICU

- Oedema will usually complicate fluid management, albumin is often low – senior support and advice is required
- Initiate neuro-observations
- **CONSIDER DIFFERENTIAL DIAGNOSIS OF THE PRESENTATION – INCLUDING SEPSIS AND OTHER CAUSES OF ACUTE DETERIORATION IN CONSCIOUS STATE.**

Important consideration for ongoing phosphate management – how to wean:

- Check phosphate at day 10 and 14.
- Phosphate should normally be weaned off after two weeks of treatment if phosphate remains stable as long-term phosphate can lead to paradoxical hypophosphataemia. This should be done by reducing the dose by one Phosphate Sandoz® tablet every two days with serial measurement of phosphate
- Side effects of phosphate treatment include diarrhoea and abdominal pain – consider reducing the dose if phosphate is stabilised or if delivering phosphate via an IV route instead of oral.

Other considerations and complications during refeeding:

- Severe central abdominal pain during refeeding. Consider pancreatitis or superior mesenteric artery syndrome
- Adherence with plan.

Electrolyte, vitamin and mineral supplementation considerations	
Phosphate	❖ A fall in phosphate levels due to refeeding will usually be seen in the first 48-72hrs but can occur any time in the first two weeks ❖ Phosphate supplementation should be given orally where possible ❖ Recommended oral supplementation dose: • Children 5-17 years 2–3mmol/kg daily in 2–4 divided doses, Max 97mmol/day. Dose to be adjusted as necessary. (Check CHI Formulary) ❖ Phosphate Sandoz® contains 16.1mmol Phosphate, Sodium 20.4mmol, Potassium 3.1mmol per tablet ❖ IV supplementation may be appropriate if levels not increasing with oral supplementation, or where PO supplementation not possible, or if serum phosphate <0.5mmol/L. Discuss with Consultant ❖ Recommended IV supplementation dose: • Children 2-17 years 0.4mmol/kg daily, dose to be adjusted as necessary ❖ The administration rate of phosphate should not exceed 0.05mmol/kg/hour • In a PICU higher rates up to 0.3mmol/kg/hour are permitted (See CHI Formulary) ❖ Once phosphate levels have normalised, supplementation should be weaned with continued monitoring ❖ Supplement vitamin D levels if required
Potassium	❖ Recommended Oral dose: • 1-2mmol/kg/day; dose will be dependent on deficit and daily maintenance requirements • Total daily dose can be given in three divided doses and adjusted as necessary ❖ Kay-Cee-L® syrup contains Potassium 1mmol K^+ per ml ❖ If oral potassium supplementation is not possible or patient is symptomatic, IV supplementation may be more appropriate. See CHI Paediatric Formulary or BNFc for dosing

Magnesium	❖ Recommended oral supplementation dose: • Children 10-17 years: 5mmol 1 to 3 times daily depending on the levels • Magnesium Verla® contains 5mmol per sachet ❖ Recommended IV supplementation dose: • Children 1 month-12 years 0.2mmol (50mg)/kg 12 hourly, max single dose 4mmol(1g) • Children 12-18 years 4mmol 12 hourly • 1g magnesium sulphate is equivalent to approximately 4mmol magnesium^{2+}
Calcium	Hypocalcaemia occurs less commonly. Where a calcium supplement is required in the scenario where there is low/normal phosphate Calvive® **Effervescent Tablets** Calcium Lactate Gluconate /Calcium Carbonate (Each tablet contains: Calcium 1000mg = 25mmols) or similar product is the preferred preparation. Avoid Calcium Carbonate only preparations. • Child 1month-4years: 0.25mmol/Kg PO 6 hourly adjusted to response. • 5-12 years: 0.2mmol/Kg PO 6 hourly (Maximum 10mmol) adjusted to response. • >12 years: 10mmol 6 hourly PO adjusted to response.

REFEEDING GUIDELINE FLOW CHART:

On Admission:

Check: Na, K, Cl, Urea, Creat, Ca, Phos, Mg and discuss any electrolyte abnormalities with Medical Consultant

Perform ECG: Look for QTc* and arrythmia

Do not prescribe prophylactic phosphate or thiamine routinely, do not check glucose routinely unless symptomatic

Check Vitamin D and prescribe 400IU Vitamin D prophylaxis

Low Phosphate

Do not increase feeds until phosphate corrected and normal
Check Vit D and PTH if baseline Phosphate low
Discuss abnormal phosphate with Consultant
Treatment depends on the level:

>0.5 mmol/L:

Correct orally with stat dose in form of Phosphate Sandoz®
Commence regular replacement with 2-3mmol/kg/day PO in 2-4 divided doses (max 97 mmol daily)
Check Phosphate level 12 hours after initial stat dose

<0.5 mmol/L:

Consider need for IV treatment and discuss with Consultant Repeat ECG if developed as part of refeeding syndrome

<0.3mmol/L:

Significant risk for feeding safety
Will need intensive monitoring, potentially PICU

Normal Phosphate

Commence feeding as per dietetic plan

Check daily Na, K, Cl, Urea, Creat, Ca, Phos, Mg for 2-5 days for biochemical evidence of refeeding syndrome

Discuss any electrolyte abnormalities with consultant

Check daily for clinical signs of refeeding syndrome (confusion and oedema)

If phosphate remains normal then cease any supplementation after 2 weeks

Develops refeeding syndrome

1. No clinical signs but low phosphate

OR

2. Clinical signs (oedema, confusion)

Clinical Signs of Refeeding Syndrome:

Discuss with Medical Registrar and Consultant on Call

Initiate neuro-observations

Put on cardiac monitor: may require transfer to the PICU depending on the severity

Patient with cardiac arrhythmia should be discussed with Cardiology Service

Reduce feeds to starting dosage (feeds on admission) – discuss with consultant and dietitian

Check: FBC, LFTs, Na, K, Cl, Urea, Creat, Ca, Phos, Mg, venous blood gas for measurement of acid-base and more immediate measurement of Na and K

Correct electrolyte disturbances – this should generally be done intravenously with close medical monitoring

Check blood sugar and treat hypoglycaemia

Oedema will complicate fluid management & albumin is often low – senior support & advice is required

*< 15 years of age (males and females) an abnormal is QTc is > 460 ms, > 15 years of age an abnormal is QTc is > 450 ms in males and > 460 ms in females

APPENDIX 8

UNIQUE NURSING CONSIDERATIONS FOR PATIENTS WITH ANOREXIA NERVOSA

On arrival to the ward:

1. Help patient dress in light pyjamas/hospital gown only
2. Discontinue IV fluids and remove IV cannula unless clinically indicated
3. Ensure patient receives nutrition as prescribed by out of hours meal plan
4. Commence 48 hours of strict bed rest and continuous cardiac monitoring (Activity Level 1)
5. Encourage parents to supervise patients' access to the internet at all times (e.g. phone/laptop)

Vital sign monitoring

1. Record lowest HR day & night (sustained for 30 seconds – fleeting ones are not significant)
2. Measure orthostatic vitals four times daily (nocturnal measurement not required). (Lie patient flat for 5 mins then record HR & BP; stand them up, wait 3 mins then record HR & BP)

1st day on ward:

Urine dipstick: check for specific gravity, ketones, blood (then twice weekly before weight check)

- Do not send to lab unless clinical concern for UTI

Check patient's weight: post void, before breakfast, in light pyjamas/gown (then twice weekly)

Measure orthostatic vitals four times daily

Liaise with MDT:

- Dietitian for individualised meal plan
- Medical team for admission labs and 5 days re-feeding lab requests
- Psychiatry team for assessment/management
- 1:1 supervision
- Special observer: documentation of meals/nutritional supplements offered and consumed

Medical instability is defined as:

- Hypothermia: Temp <36°C
- Severe bradycardia: HR <50 bpm day time, <45 bpm asleep
- Hypotension: Standing systolic BP <0.4th centile (84-98 mmHg)
- Orthostatic instability: HR changes of >35 bpm or systolic BP changes of >15 mmHg
- Weak pulses or poor peripheral perfusion
- Evidence of abnormalities on blood work

Nutrition:

Meals and snacks as prescribed – food is their medicine

If food is too difficult then they can have an oral nutritional supplement (as prescribed in meal plan)

If an oral nutritional supplement is too difficult then placement of a NG tube will need to be considered by the MDT to ensure they receive the nutrition they require for their recovery.

Purpose of admission:

Achieve medical stabilisation through rest, nutrition and weight restoration
Support, encourage and motivate the family and patient to facilitate full recovery
Monitor and challenge the eating disorder behaviours, educate parents to continue this at home
Provide a safe and structured environment, model appropriate supervision and limit setting.

Tips for meal support:

4 C's of meal support: remain Calm, be Confident, be Consistent, and be Compassionate
Give cues in a neutral tone, encourage pleasant conversation: exclude food/weight related topics
Watch out for smearing, crumbling, cutting food into small pieces, dripping fluids, hiding food.

Staff and parents should watch this meal support educational video before providing meal support:

http://www.youtube.com/watch?v=SnyIF750w5U&list=PL21D7E85D804263B2

(Please watch on personal laptop/phone as most institutions block You Tube)

APPENDIX 9

SUMMARY OF SUPERVISION REQUIREMENTS

PLACE PATIENT STICKER HERE

Date: _____ _____ Ward: _____ _____ Please circle/tick as appropriate:

Activity Level: (please see appendix 10 for detailed description)

( ) Level 1. Strict bed rest. Wheelchair required to go to the bathroom.

( ) Level 2. Seated by the bedside. Can walk to bathroom. Time off ward: wheelchair required.

( ) Level 3. Seated by the bedside or at school. Can walk to the bathroom. No wheelchair required.

( ) Level 4. Time at home as per MDT. Rest when at home encouraged.

Supervision in General:

1:1 supervision is required:

( ) Constantly (day and night)

( ) Day time only (8am – 8pm)

This can be provided by: ( ) Staff ( ) Parent ( ) Other: relationship to patient _____

Supervision of Nutrition:

1:1 supervision for all nutrition (inc. 60 mins after meals /30 mins after snacks)

This can be provided by: ( ) Staff ( ) Parent ( ) Other: relationship to patient _____

Supervision of Bathroom/Hygiene Needs:

( ) Parent/staff standing outside with door ajar

( ) Parent/staff to fully supervise activity in the bathroom

( ) Sit down shower with parent supervision (max 3 per week)

( ) Standing shower with parent supervision (max 3 per week)

Supervision of access to social media/the internet:

(Patients are allowed to use ward phone to contact parents at all times)

( ) Parent/staff to fully supervise time on phone/laptop

School

( ) No school

( ) Bed-side schooling

( ) Can attend school room

Form completed by (name, title, contact details): _____ _____

Date of next review: _____ _____

APPENDIX 10

ACTIVITY LEVELS FOR STAFF

Level 1 Weight on admission, Mon & Thu Urine dip pre-weight Mon & Thu Continuous cardiac monitoring Orthostatic VS 4 hourly	All patients are on Level 1 for a minimum of 48 hours Patient must remain on the ward Patient will be on strict bed rest Patient must use a wheelchair to go to the bathroom As patient is medically unstable showers are not advised
To progress to Level 2: Medically stable during the daytime for 2 days, excluding first morning HR and BP Consistent weight gain	
Level 2 Weight: Monday & Thu Urine dip pre weights Mon & Thu Cardiac monitor overnight if indicated Orthostatic VS BID	Patient can engage in seated activities at their bedside Patient must sit out in their chair for each meal & snack Patient must rest after each meal and snack Patient may walk to the bathroom on the ward Patient may have 30 mins off the ward supervised in a wheelchair daily (twice daily at weekends) Patient must remain on hospital grounds Patient may have a sit-down shower, with tepid water, for a max 5 minutes with full parental supervision: 3 per week
To progress to Level 3: Medically stable (day and night) for minimum of 48 hours Consistent weight gain	
Level 3 Weight: Monday & Thu Urine dip pre weights Mon & Thu Orthostatic VS BID	As per Level 2 except: Wheelchair is not required for the time off the ward The shower can be standing
To progress to Level 4: Medically stable (day and night) for minimum of 48 hours Consistent weight gain Patient assessed as appropriate by team to have time at home	
Level 4 Weight: Monday & Thu Orthostatic VS BID Urine dip pre weights Mon & Thu	The family & MDT plan time at home during the day to practice weight restoration at home: agreed upon, in advance Once time at home is successful the patient may have time at home overnight: agreed upon in advance Patient may continue privileges of Level 3 Time at home will be reassessed if weight gain slows

APPENDIX 11

ACTIVITY LEVELS FOR FAMILIES

Your child will move from bed rest to time at home based on their:

1. Medical stability (heart rate, blood pressure)
2. Weight restoration (getting back towards a healthy weight)

Not all patients will advance through all the stages, and they are all not required before discharge. This is not prescriptive, but is a guide for the MDT to use to inform their decision: the decision to progress through the levels will be made and explained to you by the MDT.

Level 1	For at least the first 2 days from admission to the ward your child will remain on strict bed rest & use a wheelchair to go to the bathroom on the ward. They must go to the bathroom before meals/snacks. Whilst on strict bed rest it is not safe for your child to have a shower yet.
Level 2	Your child will be off strict bed rest, and can engage in seated activity in the room. They must sit out on the chair beside their bed to eat their meals/snacks. They must go to the bathroom before meals/snacks and rest afterwards. They can walk to the bathroom on the ward, but if they are going off the ward they will have to use a wheelchair. Once it is safe to do so they can have a sit-down shower with your supervision: please make sure it is not too long and the water isn't too hot.
Level 3	This is the same as level 2 except: Your child doesn't need to use a wheelchair when they go off the ward You can bring a snack off the ward and supervise them eating it in a different location (e.g. canteen in the evening when it is quiet) The purpose of the time off the ward is to sit and eat elsewhere, not for exercise. We encourage you to do this daily during the week, and twice daily at the weekend. It may be safe now for your child to have a standing shower with your supervision: please make sure it is not too long and the water isn't too hot.
Level 4	Having planned it with the MDT, you will bring your child home to practice meal supervision at home. When at home you need to ensure your child rests and eats all the food you make for them. This helps prepare you for discharge. Time at home will be reassessed if your child's weight gain slows.

APPENDIX 12

FOOD AND FLUID RECORD CHART

Patient Sticker

Date: **Ward:**

Time	Food and fluid offered (description of each food & drink items)	Food and fluid consumed (description & % of total food and drink items)	Oral nutritional supplement offered (mls)	Oral nutritional supplement consumed (mls)	Nutritional supplement provided via NG tube (mls)
Breakfast					
Morning Snack					
Lunch					
Afternoon snack					
Dinner					
Evening Snack					
Night Snack					

APPENDIX 13

MEAL SUPPORT GUIDELINES FOR STAFF

All staff providing meal supervision should watch the video below that provides strategies to help carers provide structure and support to youth with eating disorders before, during and after meals: https://www.youtube.com/watch?v=SnyIF750w5U&list=PL21D7E85D804263B2
(Please watch on a personal device as most institutions block You Tube)

All meals are therapeutic. Eating on a regular schedule, on a meal plan to meet nutrition needs, and eating in a consistent and normal manner is the emphasis at the meal table. Please remember that meal times are anxiety provoking for patients with an eating disorder.

Mealtimes on the ward are dictated by local hospital catering, but for example 8:30am breakfast, 10.30am morning snack, 12.30pm lunch, 2:30pm afternoon snack, 4.30pm dinner, 6.30pm evening snack, 8.30pm night snack.

There should be no interruptions to meal times (e.g. team meetings).
Patients are to start and finish at the designated time (30 mins per meal and 15 mins per snack).
Patients are to be supervised for 60 mins after meals and 30 mins after snacks.

Drinks are provided by the hospital kitchen – jugs or bottles of water/other drinks are not permitted.
All fluids are to be completed within meal or snack times.
Patients should be advised not to complete their fluids before they start eating solid foods.

STAFF GUIDELINES AT MEALS

Staff assigned to the meal should expect to sit at the table for the duration of the meal. Staff should support and encourage patients who are struggling by being firm and non-judgemental of their struggles. Staff should initiate appropriate topics of conversation to aid as a distraction at meal time. Staff are expected to act in a neutral manner when a patient is struggling with a meal. Staff must not engage in any negotiations or replacements of food items, except where clearly indicated in the care plan (e.g. given a food in error, with respect to an allergy or cultural food requirement).

Remember the 4 C's of meal support: Be calm, confident, consistent and compassionate.

The patient is encouraged to be present for the meal, and not watch TV/play games. In some cases, patients find it easier to eat if distracted, however the decision to allow this is made by the MDT.

Everyone (patients, parents, staff) will be respectful to each other, even if distressed, anxious or frustrated. If a patients is engaging in negative behaviours, staff should validate their distress or fear and remind them that we all need to be respectful in our interaction, and that staff are working to support them in their recovery.

It is the goal that all edible food will be consumed at the meal. If a young person is struggling to consume food or engaging in eating disordered behaviours, prompts to eat, or to keep taking 'one more bite', and reminding them that this is needed for recovery, are all useful approaches.

PRIOR TO THE MEAL

Staff must set up the table and remove food from packaging.

Patients must use bathroom and wash hands, and long hair must be tied back for meals.

Patients cannot sit in front of food without staff supervision.

Hoodies and sweaters with pockets may not be worn at meal times and long sleeves must be rolled up.

DURING THE MEAL

Staff should call the starting time of the meal and remind patients of the duration of the meal.

Patients may not get up from the table during the meals.

Patients are expected to start eating within the first minute and may require support to do so.

Redirect conversation about treatment, dieting, weight and shape, exercise or eating disorders.

Alert patients to the remaining time at the halfway mark, and with 5 minutes remaining.

Patients are not permitted to use napkins to wipe hands until the meal is completed.

Hands should stay above the table during meals.

Food items that have spoiled or have non-edible blemishes may be replaced with oral nutritional supplement (ONS).

Patients should be cutting bite-sized pieces to eat - redirect if their bites are too small.

Food may not be broken or torn into small pieces to be eaten.

Any food that is smeared, spilled, hidden, must be replaced with an equivalent amount of ONS.

If staff are concerned that food has been hidden they may check pockets or sleeves: the food will then be replaced with an equivalent amount of ONS.

AFTER THE MEAL

Staff must ensure all utensils are returned to the kitchen staff.

Staff must clearly document what food and drink was offered, and what % of it was consumed.

INCOMPLETE MEALS

If a patient is unable to complete all/some of a meal or snack within the time allowed, what was not consumed will be replaced with an oral nutrition supplement that they have 15 minutes to drink.

DISRUPTIVE MEALS

Should any incident occur at a meal which makes eating difficult (i.e. eating disordered behaviours that are not stopped when redirected, inappropriate conversation or behaviour, disrespect toward staff, not starting food five minutes into meal, non-adherence to meal guidelines), please document these in the meal observation sheet and inform the nursing staff and MDT.

APPENDIX 14

MEAL SUPPORT GUIDELINES FOR FAMILIES

Family based treatment (FBT) has been shown to be the most effective treatment for Anorexia Nervosa in young people. Parents are a key component of the recovery process. Food is the most important medicine for your child, and while weight restoration starts as an inpatient, the majority will be at home. Due to the nature of eating disorders, meals can be the most challenging time of day. During your child's admission the MDT will support you to remain a central part of your child's recovery, by supporting them during their meals.

Please watch the videos below which provide evidence-based strategies to help families provide structure and support to their child before, during and after meals: **https://www.youtube.com/watch?v=SnyIF750w5U&list=PL21D7E85D804263B2**

Other excellent sources of information include the "dealing with mealtimes" the Bodywhys | Free Resource - A Guide for Families. **https://www.bodywhys.ie/supporting-someone/resource-for-parents/" Bodywhys | Free Resource - A Guide for Families**

We strongly recommend that you enrol for the next available PiLaR Programme run online by Bodywhys, which is a support group for carers of young people with eating disorders: **https://www.bodywhys.ie/supporting-someone/pilar-programme-for-families/**

MEALS DURING ADMISSION

Schedule

A predictable routine helps reduce anxiety. To support weight restoration, a young person will require 3 main meals and 3/4 snacks a day, both in the hospital and at home. During admission exact meal-times are dictated by local hospital catering. A set time for meals is provided: 30 minutes for a main meal, and 15 minutes for a snack. **Do not discard any remaining food** as nursing staff will be recording your child's intake.

Meal Plans

All patients will initially follow a set menu, but once seen by a dietitian this will be individualised to your child's needs. A wide variety of foods, including feared foods will be introduced as we know this approach will lead to a better long-term outcome following discharge. If there is a history of food allergies the dietitian and doctor will determine what can be eaten safely and find alternatives if necessary.

Vegetarianism is higher among patients with eating disorders. Often it may be part of the eating disorder and used as a way to reduce food intake. Recovery involves reintroducing all foods that were eliminated by the eating disorder. Patients are expected to eat all foods within the meal plan. Strong dislikes will be evaluated within the context of the eating disorder. In some cases, an exception for a specific food will be permitted, but not a whole food group.

Preparation for meals

All patients are expected to be ready and on time for all meals and snacks. This includes using the bathroom and washing hands prior to the meal. Initially your child will be on bed rest and meals will be in bed, but once off bed rest they will be eating sitting out at the bedside.

Due to fears around eating or weight restoration, young people may try and avoid eating by hiding food or spitting it into tissues for example. Therefore, we recommend they don't wear tops with pockets, roll up long sleeves and not have tissues/napkins available.

Expectation and goals

There are a number of expectations at mealtimes. Being consistent on these expectations is vital to support your child being able to complete all of their nutrition. The goal for every meal is to eat all of the food provided. Patients will be expected to start eating the meal within the first 5 minutes and to complete their meals within the allotted time. Conversation during meals should be appropriate and not centred around food, weight, shape, or eating disorders.

During the meal

Once the meal arrives keep the conversation light, aimed to relax and distract a young person from distress where possible. Young people may try and engage in conversation or bargaining about meals once they arrive. This is the eating disorder impacting their thoughts and trying to find ways to avoid or minimise intake. Engaging with these conversations have been shown to reduce intake at meals. If your child tries to engage you in comments about the portion size, food quality, taste or texture, or seek alternative foods, gently but firmly remind them that meals are not negotiable at meals times, and any discussions can be had outside of meal times.

Some children require reminders to complete their meal. Others may require distraction and neutral conversation. Each child is different, and you will learn what will be successful as you begin to support your child. If after 5 minutes your child has not commenced eating gently prompt them to start, e.g. ***I know this is hard for you, but you need to start now***. Prompts need to be increased if the child has not started. If a young person finds prompting unhelpful, it may be useful to discuss this outside of mealtimes. Support needs to be consistent, yet caring. Remembering that the young person has overwhelming feelings of fear and guilt when faced with meals.

During a meal, children may demonstrate behaviours that are "eating disordered" for different reasons, e.g. taking small bites or cutting food into small pieces, smearing food around on the plate or crumbling food into small pieces, leaving some food behind on the plate and excessive movement: perching/shifting in seat, moving/shaking/tapping legs/feet. Any food that is wasted must be replaced with the appropriate amount of the oral nutritional supplement.

Parents should be mindful to notice, name and redirect these behaviours when they occur, e.g. ***you are doing great, now you need to put more on your fork, I know this is hard but cutting up your food too small doesn't help and "I need you to sit back in and stop tapping your foot".***

It is important to remain consistent. For every meal the goal and expectation is 100% of the meal to be consumed. Continue to encourage and expect your child to complete all of the meal until the allotted time is complete and staff remove the tray. If any food has not been consumed during the meal for any reason a nutritional supplement will be provided to replace the food and the patient will have 15 minutes to consume this.

Post meal support

We recommend that a young person rests and is fully supervised for 60 mins after a meal and 30 mins after a snack. It is important to support your child during this time as they may be distressed and anxious. Often validating or comforting feelings and then focusing on distraction can be more helpful at this time rather than discussion around meals or eating disordered thoughts and fears. Having activities such as art/crafts, card games, or screen time can all be of help. When acknowledging feelings and providing comfort, it is really important to remember and name that the distress is caused by the eating disorder, and although treatment is difficult is necessary to protect your child from harm. Being compassionate but consistent in the need to help your child recover from the eating disorder is crucial.

4 C's of meal support:

Remain CALM, Be CONFIDENT,

Be CONSISTENT, Be COMPASSIONATE

APPENDIX 15

INFORMATION ON THE MENTAL HEALTH ACT

The vast majority of children and adolescents with eating disorders within paediatric hospitals will be treated with the consent of their parents.

In the event that a 16-17 year old refuses essential treatment, or the parents of a child of any age refuse consent to treatment, this can present a difficulty for the treating clinicians.

If the child or adolescent fulfils diagnostic criteria for a mental disorder (Eating Disorders are considered mental disorders) then Section 25 of the Mental Health Act may apply:

- If there is serious likelihood of the child or adolescent causing immediate and serious harm to him/herself or others; or
- If the judgement of the child is severely impaired and failure to admit him/her would likely lead to a serious deterioration in his/her condition; or
- If appropriate treatment can only be provided if the child is admitted and the reception, detention and treatment of the child will likely benefit or alleviate their condition to a material extent.

In such circumstances, an application can be made to the district court for an order authorising the admission for detention and treatment of the child or adolescent in a specific approved centre.

Children's Health Ireland at Temple Street, Crumlin and Tallaght Hospital are not approved centres.

Approved centres include Linn Dara in Dublin, St. Vincent's in Fairview, Eist Linn in Cork and Merlin Park in Galway.

In the event that a child or adolescent is too unwell medically for transfer to an approved centre, then legal advice within the paediatric hospital should be sought. Separate legal proceedings may have to be initiated to facilitate treatment by clinicians without consent.

In circumstances where an older adolescent refuses consent to treatment, but their parents give consent, it may be prudent to seek a legal opinion within the paediatric hospital.

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Ms Marianne O'Reilly	Dietetic Manager	CHI at Temple Street
Dr Sarah Richardson	Consultant Paediatrician with a special interest in Mental Health	CHI at Crumlin
Paediatric Clinical Advisory Group	Faculty of Paediatrics	RCPI, Dublin
Dr Órla Walsh	Consultant Paediatrician with a special interest in Adolescent Medicine	CHI at Temple Street
Ms Mary Worrall	Chief II/Senior Pharmacist	Children's Health Ireland







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