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Anorexia Nervosa: The Acute Management of the Paediatric Patient

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) with Anorexia Nervosa (AN), in line with the HSE Model of Care for Eating Disorders. (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
HCA	Healthcare Assistant
HR	Heart Rate
MDT	Multidisciplinary Team
NG	Nasogastric
Orthostatic vitals	Patient to lie down for 5 minutes and take their HR and BP, then have them stand up for 3 mins and repeat their HR and BP
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 (Solomon, 1990)
RNI	Reference Nutrient Intake
USG	Urine Specific Gravity

Target patient population

This guideline is intended for children and adolescents presenting to CHI with Anorexia Nervosa (AN).

Target users

This guideline should be used by all members of the multidisciplinary team (MDT) involved in the acute 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
- Healthcare Assistants

Section 1: Initial Assessment in the Emergency Department or Outpatient Setting

Risk assessment

A Junior MARSIPAN guide to risk assessment should be completed by the medical team on all patients presenting to the Emergency Department/outpatient setting (see [Appendix 1](#)).

- Orthostatic vitals (have patient lie down for 5 minutes and take their HR and BP, then have them stand up for 3 mins and repeat their HR and BP).
- Weight and height should be measured as part of this risk assessment.
- Remove shoes when measuring both weight and height.
- Weigh in light clothing only (e.g. hospital gown) and post voiding urine.

All items on the Junior MARSIPAN should be scored. Each item is scored from a range from blue (low risk), green (moderate risk), amber (high concern) or red (high risk). Clinicians must consider all items when determining a clinical judgement of the overall risk profile.

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.

Low risk patients should be referred back to the GP with advice to refer to local CAMHS if appropriate.

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

Once a decision to admit has been made, the patient should be referred to the dietitian for nutritional assessment and development of nutrition care plan.

Blood tests:

Baseline blood tests should include haematology (Full Blood Count) and biochemistry (Glucose, Na, K, Cl, Urea, Creat, Protein, Albumin, Ca, Phos, Mg, Bili, Alk Phos, AST, ALT), consider venous blood gas and lipase/amylase if patient is purging.

ECG:

Standard care for patients on presentation.

All patients should have an ECG performed on the day of presentation which should be reviewed on the same day, in particular for evidence of prolonged QTc. Automatic ECG machine calculation of the QTc are frequently incorrect and should therefore be calculated manually by a member of the medical team or the ECG technicians. See [Appendix 2](#) for an explanation on how to manually calculate the QTc.

< 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)

An abnormal QTc should be discussed with the medical consultant, the on call cardiology registrar and the nurse in charge should be notified. It is important information in the context of an abnormal QTc to know if there is any family history of heart conduction problems or history of sudden death.

Prolonged QTc can be congenital and not just due to malnutrition so longer-term risk and management for congenital QTc should be thought of. Evidence of prolonged QTc should be followed up with a repeat ECG when the patient is weight restored.

Other common abnormalities noted with malnourished states include but are not limited to: bradycardia, PVC's, arrhythmias. A small percentage of patients with AN will also have small pericardial effusions, but echocardiograms are not routinely required.

Urinalysis:

Standard care for patients on presentation

It can determine the presence of ketones (a by-product of fat metabolism that occurs when the body doesn't have enough fuel) and the urine specific gravity, which can assess dehydration and fluid intake. If dilute it can help indicate that the patient is water-loading (falsely increasing their weight by consuming excess quantities of fluids).

Section 2: Inpatient Assessment & Management

Multidisciplinary Model of Care

The HSE Model of Care recommends that the goal of admission to acute paediatric services is medical stabilisation, with discharge as soon as possible to appropriate community treatment provision (Eating Disorder Services, HSE Model of Care for Ireland, 2018). Goals should be formed through collaborative care planning, and clearly outlined and agreed with the patient/ family, for example:

- a. Medical assessment and /or stabilisation of physical complications associated with anorexia nervosa.
- b. 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, either to community CAMHS or inpatient CAMHS settings.
- c. Provision of psychoeducation to patients and families, to support and enable safe and timely discharge planning to onward services.

Effective management of patients in the acute setting requires good multidisciplinary team working, through close liaison between staff and teams providing holistic care.

Regular MDT meetings will help to facilitate communication both within the team and with the parents and the patient. An initial meeting of team should occur as soon as possible after admission, with further reviews occurring at least once weekly (HSE Model of Care). The involvement of each member of the MDT is briefly described below:

- Adolescent medicine and general paediatric team: medical assessment and stabilisation, and monitoring for complications of anorexia nervosa.
- Dietitian: provision of meal plans, need for refeeding blood work, laxatives for constipation, NG feeds if required and mineral supplementation for nutritional deficiencies.
- Ward nursing: day to day nursing care including orthostatic vital sign monitoring and support of patient and family.
- HCA staff: importance of meal support and supervision, and patient support
- Paediatric Liaison Psychiatry Team: diagnostic clarification, management and preparation of patient and family for discharge to appropriate CAMHS services for follow up care.

Section 3: Adolescent Medicine and/or General Paediatrics

The medical team will be involved in the day to day management of the patient. On admission the following signs/symptoms should be assessed from the history and physical examination.

Clinical History

Diagnosis of an eating disorder and exclusion of an alternative diagnosis:

- **Presenting Complaint and History of Presenting Complaint:**

Weight history	Timeline, 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/veganism/gluten/lactose intolerance (pre-dates weight loss), 24-hr dietary recall, fasting
Meal socialization	Prefers to eat alone, preoccupation with ingredients, baking/cooking for others but not eating it themselves
Unusual eating attitudes and 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
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 amenorrhoea, weight at last normal menstrual period, contraception, possibility of pregnancy

- **Previous Medical and Family History**

Past Medical History	Birth, developmental milestones, hospitalizations
Past Surgical History	Injuries, operations
Past Psychiatric History	Anxiety, depression, obsessive compulsive disorder, autism spectrum disorder
Medications and Allergies	
Immunization 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 and orthostatic instability)**

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, diarrhea, 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

- Health care providers should take a developmentally-appropriate psychosocial history from children, adolescents and their families on admission
- In the case of adolescents, one example that can be used is known as the acronym HEEADSSS
- It is a structured interview with a series of domains that aims to identify psychosocial risks & resilience factors which may contribute to adolescents' presentation (e.g. social media misuse and bullying)
- 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.
- Questions should be structured so as to facilitate communication and to create a sympathetic, confidential, respectful environment where young person and their family can attain adequate health care

Home and family relationships	Including parents' occupations, stress at home
Education and Employment	High achiever, perfectionistic, employment if applicable
Eating	Already completed as part of history of presenting complaint
Activities and peer relationships	Bullying/teasing, 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, mood changes
Safety	Physical, emotional or sexual trauma/abuse (including bullying/teasing)

- **Physical Examination: (signs of starvation and orthostatic instability)**

Growth Centiles	Height, Weight and calculate BMI (plot on appropriate growth and BMI charts) Will be done by dietitian once admitted
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 associated 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

- **Recommended Investigations to screen for complications of starvation**

Laboratory	Review of lab work done in ED and further investigations once admitted: <ul style="list-style-type: none"> • Vitamin D (Cholecalciferol) • Ferritin • Thyroid Function Tests (TFTs)
Cardiac	ECG: If not done in the ED. Must be completed and reviewed before commencement of feeding.
Radiology	Dual Energy X-ray Absorptiometry (DXA) to assess bone mineral density is recommended for females if amenorrhoeic > 6 months. This is not urgent, and can be done in both in and outpatient settings. If required should only be repeated annually, and only if resumption of normal menses has not occurred. There is currently no definitive recommendation for males. It is important to be aware that the mainstay of treatment for low bone mineral density in patient with low weight is weight restoration and supplementation of Calcium and Vitamin D as clinically indicated.

- **Investigations to be considered when clinically indicated, or to exclude alternative diagnoses**

Laboratory	As clinically indicated: <ul style="list-style-type: none"> • Folate • Vitamin B12 • Zinc • Erythrocyte sedimentation rate (ESR) • C Reactive Protein (CRP) • Early AM Cortisol • IgA and Anti-tTG • Faecal calprotectin • Beta hCG, LH, FSH, oestradiol and prolactin in amenorrhoeic females • Testosterone and Sex Hormone Binding Globulin (SHBG) in males
Cardiac	Echocardiogram: rarely required if symptoms of cardiorespiratory compromise
Radiology	Chest X Ray +/- Mantoux MRI Brain

Medical Management

Daily medical review with daily biochemistry should be performed for the first 2-5 days following the initiation of refeeding: Na, K, Cl, Urea, Creat, Ca, Phos, Mg. These should be repeated at 7-10 days for assessment of delayed onset re-feeding.

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 require follow up before discharge from the hospital, or consultation of necessary subspecialist service (e.g. endocrine if low AM cortisol detected).

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 total fluid allowance to be calculated as per dietitian on meal plan.

Monitoring for Medical Instability:

Medical instability is defined as:

- Hypothermia: Temp <35.5 °C
- Severe bradycardia: HR <50 bpm day time, <45 bpm asleep
- Hypotension: BP <90/45 mmHg
- Orthostatic instability: HR changes of >35 bpm or systolic BP changes of >20 mmHg
- Weak pulses or poor peripheral perfusion
- Evidence of abnormalities on blood work

All patients should be placed on a minimum of 48 hour bed rest and continuous cardiac monitoring to assess for bradycardia, tachycardia and rhythm abnormalities. They should be assessed for orthostatic HR and BP changes 4 times per day. Nocturnal BP measurements are not required. This should 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:

1. Lowest recorded HR of 50bpm for 2 consecutive days – can discontinue daytime monitors
2. Lowest recorded HR of 45bpm for 2 consecutive nights – can discontinue night-time monitors

Once off continuous cardiac monitoring, orthostatic HR and BP monitoring should be performed four times daily.

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 48 hours) and
- Patient is no longer at risk of refeeding syndrome (typically 5 days)

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.

Strict intake and output (including bowel motions): monitored and recorded in the patient's medical record.

Medical Management of Nutritional Rehabilitation (See dietetics section)

- 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.
- A comprehensive oral meal plan should be devised, consisting of clear expectations about what is to be consumed at each meal and snack time, and supplement drink top ups. If the meal plan and supplement drink top ups are not managed then serious consideration for nasogastric tube insertion should occur.
- If nasogastric tube feeding is required, a bolus feeding regimen should be implemented as opposed to continuous feeding as it most mimics normal physiology and can deliver feed in a shorter period which can reduce opportunities for compensatory behaviours, and impacts least on staffing. Bolus feeding also allows food and supplements to be offered on each occasion before the feed is given.
- 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.

Suggested Medication Prescribing: see [Appendix 3](#) for medications stocked in CHI at Crumlin, Temple Street, and Tallaght University Hospital Pharmacies.

Medications	Indications and Cautions
Multi-vitamin and mineral supplement <ul style="list-style-type: none"> • Centrum Kids ≥4years • Centrum Advance ≥ 11years 	Prescribed to all admitted patients. Should be continued upon discharge.
Vitamin D <ul style="list-style-type: none"> • 800units daily (prophylactic dose) 	<p>Check Vitamin D on admission. Malnourished paediatric patients are at risk of low Vitamin D levels, and patients admitted have decreased exposure to daylight and are therefore also at risk.</p> <p>All patients should be prescribed a prophylactic dose whilst waiting for levels. This can be altered thereafter in response to reported deficiency or insufficiency or continued at the prophylactic dose if normal.</p> <p>The purpose is to maximise Vitamin D and thus protect bone health in a context of underweight and inpatient admission from any co-existing Vitamin D deficiency.</p>
Laxatives <ul style="list-style-type: none"> • Lactulose • Macrogols Movicol®/Laxido® 	<p>Rarely required and should be prescribed with caution following review of daily bowel chart, and discussion with the MDT.</p> <p>Refeeding may cause feelings of fullness and discomfort, but with time and regular meals most patients will develop regular bowel habits.</p>
Thiamine <ul style="list-style-type: none"> • 100-300mg once daily • Dose to be adjusted as necessary • The total dose may alternatively be given in 2–3 divided doses 	<p>Consider Thiamine where starvation has been very prolonged (e.g. greater than one year at very low weight and poor intake) or there is a concern about vitamin deficiency.</p> <p>The decision whether to start prophylactic thiamine should be discussed with a consultant.</p> <p>Thiamine is rarely low as to require supplementation other than by the feeding regime in eating disordered children and young people in high income settings.</p> <p>However the rare complication of Wernicke's Encephalopathy can occur and should be thought of if there is confusion at presentation.</p>
Phosphate	<p>Prophylactic phosphate should not be routinely prescribed, however it should be considered where:</p> <ul style="list-style-type: none"> • Previous history of re-feeding syndrome. • Multiple risk factors for refeeding syndrome (Appendix 4) <p>The decision whether to start prophylactic phosphate should be discussed with a consultant.</p> <p>Prophylactic phosphate may prevent a fall in phosphate, but is unpalatable and in prolonged usage can lead to a renal driven paradoxical hypophosphataemia.</p>



Refeeding Syndrome

See [Appendix 4](#) 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.

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 when the patient is being discharged from the hospital. A copy should be also sent to the treating CAMHS service.

See [Appendix 5](#) for a Medical Discharge Summary Template

Section 4: Ward Nursing Staff

Nursing staff are an integrated 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 for the patient and his/her family.

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 refer to the CHI local nursing care plans for the patient admitted with an Eating Disorder.

Nursing staff monitor vital signs, administer prescribed medication, dispense oral nutritional supplements, provide meals/snacks and manage the time limits for these meals

If the patient requires nasogastric tube insertion, the nasogastric tube is generally inserted by nursing staff. The position of tube is checked prior to each nasogastric feed as prescribed by the dietitian.

If it is assessed that the patient may require close supervision by a nurse/carer as a special observer, nursing staff will contact ward and hospital nursing management to discuss this, and co-ordinate provision if possible, in line with local nursing policy and guidelines. Nursing will provide and review the local guidance regarding roles and responsibilities of the Special observer. See [Appendix 6](#) for a Sample of a 1 to 1 Special Observation of a Patient with Anorexia Nervosa and Report Sheet.

Vital Signs

In line with standards of care for all patients admitted to CHI, nursing staff will attend to general paediatric nursing needs of the patient, including 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, and signs of medical instability should be reported to the nurse in charge and the medical team.

Weight Monitoring

Weight monitoring may be a responsibility for paediatric nursing staff or dietetics depending on locally agreed arrangements.

Weigh on admission using a calibrated digital scale in light clothing, without shoes or jewellery, before breakfast and post voiding.

Thereafter, check weight twice weekly on specified days (e.g. Monday and Thursday).

All subsequent weight checks should be taken on the same scales in similar clothing as initial weight, and before breakfast and post voiding.

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 should be commenced on admission. This will facilitate a more accurate weight assessment and inform the MDT of the patients' nutritional status.

Urinalysis Monitoring

Urinalysis should be completed twice weekly before the patients' weight is checked. This will facilitate a more accurate weight assessment and inform the MDT of the patients' hydration status.

Urinalysis can determine the presence of ketones (a by-product of fat metabolism that occurs when the body doesn't have enough fuel) and the urine specific gravity, which can assess dehydration and fluid intake. If dilute it can help indicate that the patient is water-loading (falsely increasing their weight by consuming excess quantities of fluids).

Levels of Supervision

Nursing staff will ensure supervision is provided as decided by the MDT team. Examples of levels of supervision may be:

- 1:1 supervision: Patient is supervised 24/7
- Daytime Supervision: Supervised during the day, including all meals and snacks (e.g. 8am-8pm)
- Meal and Snack Supervision: Supervision during meal and snacks only (including 1 hour following main meals).

Activity Levels

Activity levels must be closely monitored throughout admission. The patient will initially require bed rest for a minimum period of 48 hours. After this the patient may progress to a different level of activity if appropriate. Decisions regarding activity levels are generally decided within the MDT meeting. Examples of activity levels may be:

- Complete bed rest – patient must rest on bed, and use of wheelchair to bathroom or transport on and off ward as required.
- Limited supervised independent mobility (at ward level only).
- Supervised mobility at ward level, and one walk off ward (supervised by parent/carer).
- Independent mobility (supervised off wards).

Please note all patients will require bed rest for 1 hour following main meal (breakfast/lunch/tea) for all levels of activity, throughout admission.

A patient does not have to have reached levels of independent mobility to allow transfer to another setting.

Meal Plan

Provision and Documentation of Meals:

Nutrition is a critical part of treatment. Meals must be provided as prescribed by the dietitian.

A meal plan is devised following dietetic assessment. Meals that are well planned can lower anxiety, minimises negotiation and ensures adequate nutrition.

Meals are time limited e.g. 30mins/meal and 15mins/snack.

Food/drinks are removed from packaging e.g. juice, yoghurts and nutritional supplements and served in hospital plates and cups.

Portions provided and quantities consumed must be clearly documented by the nursing staff, in a format agreed at local level.

Nursing staff should document any observed changes in the patient's mood or any observed unusual behaviours during meal times, e.g. hiding food in tissues, dissection food into tiny pieces, that have been noted during meal supervision by parents / HCA's or nursing staff.

Meal Support and Supervision

Meals may promote significant anxiety for a young person, and also parents /carers.

Parents are best considered partners in the process of recovery although individual circumstances need to be considered with respect to the parent/ carer involvement during meal times. Parents will receive psychoeducation and support from paediatric nursing staff and the Paediatric Liaison Team in providing support to their child during meal times.

All staff providing meal support and supervision are encouraged to watch the Kelty Mental Health Eating Disorders Meal Support educational video:

<https://www.youtube.com/watch?v=SnylF750w5U&list=PL21D7E85D804263B2>

The patient may require regular prompting to start and finish meals.

Try to keep conversation light and avoid discussions of food around mealtime (food issues can be discussed away from meal times).

Nursing staff /HCA should observe and document unusual behaviours during meal times, e.g. hiding food in tissues, dissection food into tiny pieces. These behaviours need to be addressed at the time of their occurrence.

4 C's of meal support; Remain CALM, Be CONFIDENT, Be CONSISTENT, Be COMPASSIONATE.

Bathroom/Hygiene Needs

Bathroom visits are offered and encouraged prior to main meal times.

The patient and family are advised against use of bathroom during the hour bed rest period post meals. This supports weight restoration through reducing activity and the risk of the young person engaging in compensatory behaviours after meals such as exercise or purging. Unsupervised bathroom access may pose a risk to a young person such as: during periods of acute medical instability; if a young person is experiencing strong urges to engage in eating disordered behaviours such as purging, covert exercise, or water loading; or if a young person is deemed to present a risk to themselves through self- harm or suicidal thoughts or behaviours.

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

If bathroom supervision is required provision of local arrangements to ensure dignity and privacy for patient will be clearly discussed with parents and documented.

Section 5: Dietitian

The dietitian has a key role in the following areas:

- Nutritional assessment
- Monitoring and interpreting anthropometry
- Developing, and managing, nutrition care plans
- Supporting the child or adolescent with AN to change their eating behaviours
- Acting as a resource for evidence-based information on nutrition to other members of the MDT

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

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 liaison psychiatry team, the medical team, nursing staff, patient, and parents/guardians/carers to obtain the information as per table 1 below.

Table 1 Nutrition and Dietetic Assessment (NCPM Format):

<p>Past medical & surgical histories Social and family history</p>	<ul style="list-style-type: none"> • Significant medical and surgical history and co-morbidities • Family composition, school, childcare, hobbies • Relevant family medical history
<p>(1)Medical, tests and procedures</p>	<ul style="list-style-type: none"> • Date and reason for presentation • History of presenting issues • Current clinical status: PEWS, BP, HR, ECG, temperature • Investigations and MDT inputs
<p>(2)Biochemistry</p>	<ul style="list-style-type: none"> • Renal, liver and bone profiles • Magnesium • Vitamin D • FBC, CRP, ferritin (if indicated) • Amylase • Bicarbonate
<p>(3)Medications</p>	<ul style="list-style-type: none"> • Prescribed medications • Nutritional and electrolyte supplements
<p>(4) Nutrition focused physical findings</p>	<ul style="list-style-type: none"> • General physical appearance • Level of engagement and cognition • Oral health and dentition • Appetite • Bowel habit • History of purging / vomiting / laxative abuse / diuretic use • Exercise / physical activity levels • Body image distortion / fear of weight gain • Primary or secondary amenorrhoea, and when periods ceased • Others e.g. Russell's sign, lanugo hair, cold extremities

<p>(5a)Anthropometry</p>	<p><u>Weight</u></p> <ul style="list-style-type: none"> • Weigh on admission using a calibrated digital scale in underwear or light pyjamas, without shoes or jewellery • Thereafter, check weight and urinalysis twice weekly on specified days (usually Monday and Thursday) • All subsequent weight checks should be taken on the same scales in the same clothing as initial weight, before breakfast and post voiding • Document the weight, scales type and clothing worn, e.g. 42.3kg; SECA chair scales, cotton pyjamas, no shoes • Record weight on anthropometry flowsheet • Plot on appropriate growth chart <p><u>Height</u></p> <ul style="list-style-type: none"> • Height should be measured on admission using a calibrated stadiometer without shoes. • Ensure patient is standing at full height • Thereafter check height monthly • Record height on anthropometry flowsheet • Plot on appropriate growth chart <p><u>Body Mass Index</u></p> <ul style="list-style-type: none"> • Calculate BMI each time weight is measured: $\text{Weight (kg)} / \text{Height (m)}^2 = \text{BMI (kg/m}^2\text{)}$ • Record BMI on anthropometry flowsheet • Plot on BMI chart • Calculate % median BMI for age each time weight is measured: • $\text{Actual BMI} \times 100 / \text{median BMI (50}^{\text{th}} \text{percentile)}$ for age and gender • Calculate target weight based on ideal weight for height and/or median BMI for age and gender <p>Calculate requirements for energy, protein, fluid and any relevant micronutrients e.g. iron, calcium, vitamin D.</p>
<p>(5b) Assessment of nutritional requirements</p>	<p>(6)Food and nutrition related history</p> <ul style="list-style-type: none"> • Detailed eating and/or dieting behaviour including: <ul style="list-style-type: none"> - Amount of weight lost, i.e. previous weight v. current weight - Rate of weight loss (over what period) - Dietary intake pre-eating disorder - Dietary intake pre-admission - Safe/unsafe foods - Meal pattern and social setting around meals - Any food groups/food types avoided, e.g. vegetarian, vegan, allergies, intolerances reported and whether food avoidances are new onset or pre-morbid - Fluid intake - Supplements - multivitamin / mineral supplements - Binge / trigger foods (if relevant)

Nutritional requirements

When calculating nutritional requirements, there are a number of key considerations:

Energy intakes should be sufficient to achieve weight gain of 0.5-1kg per week. Document EAR for age (kcal/day and kcal/kg/day). Aim to provide 30-40kcal/kg actual body weight initially. Gradually increase intake (usually by 200kcal per day) to achieve EAR (kcal/day). Calorie intake in excess of the EAR may be required due to diet-induced thermogenesis, compensatory behaviours or extreme anxiety

Protein intake should meet the reference nutrient intake (RNI) for age and gender.

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

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

Table 2: Calculation of fluid requirements

Increased fluid intake or overhydration can lead to inaccurate or 'false' weight gain and must be monitored closely. In general, excess fluid intake beyond requirements is not permitted unless severely dehydrated. Assess by urinalysis.

Consult with the medical team if there is concern about significant fluid / biochemical shifts, and the need to set limits on fluid intake.

Nutrition care planning

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

In a cooperative child or adolescent who does not require NG feeding, a staged approach to increasing energy intake and portion sizes is usually followed.

After presentation, prior to initial dietetic review commence refeeding as per out of hours guidance (see [Appendix 7](#) for a sample of this).

Once reviewed the dietitian will devise an individualised meal plan based on target energy intake, which details meals and snacks, portion sizes and times.

All snacks must be removed from packaging before serving.

Patients are encouraged to consume all meals and snacks, with no substitutions permitted.

A generic multivitamin and mineral supplement is usually recommended. Iron or Vitamin D supplementation may be required based on blood tests at baseline.

Meal plans should be regularly reviewed to ensure continued weight gain of 0.5-1kg per week, with monitoring of weight gain trends over time rather than a focus on single weight values as weight gain is rarely linear.

For out of hours admissions, commence refeeding according to out of hours guidance (see [Appendix 7](#) for a sample of this) until the next working day when they can be assessed by the dietitian.

If a patient is unable to fully comply with the meal plan and achieve adequate nutritional intake, oral nutritional supplements may be indicated to provide additional calories. The dietitian will prescribe the most appropriate product, doses and times, based on the patient's age, weight, nutritional requirements, clinical status and taste preferences. Milk based whole protein supplements are usually used. Juice-based supplements are not usually recommended in this patient group as they are fat free, but in some cases where milk was not acceptable pre-morbidly, a juice-based supplement may be appropriate.

Nasogastric (NG) feeding may be required if adequate oral intake cannot be achieved.

While NG feeding can help to restore nutritional status in the short term, it is not practical for longer term recovery. It may impact on dietary intake and resumption of normal eating, and may also present challenges when planning for discharge.

If there has been non-compliance with diet and ONS for more than three days, NG feeding should be considered.

Where NG feeding is indicated, consider a bolus feeding regimen to supplement intake where meals are not eaten or overnight feeding. NG feeding regimens are determined on an individual patient basis.

Suitable enteral feeds include whole protein, containing 1-2.4kcal/ml feeds as appropriate. The dietitian will prescribe the appropriate product, volume and regimen, based on patient's age, weight, nutritional requirements and clinical status.

Enteral feeds labels should be removed to avoid any anxiety about the calorie content.

Parenteral nutrition is not recommended in this patient group.

On discharge a dietetic summary should be sent to CAMHS provider and copy to GP.

Section 6: Psychiatric Liaison Service

The Psychiatric Liaison Service (PLS) may comprise of Consultant Child and Adolescent Psychiatrist(s), NCHDs, Clinical Nurse Specialists and/or Liaison Nurses. In certain locations the service may also include Mental Health Social Workers.

The PLS will provide on-going consultation, psychoeducation and support to the multidisciplinary teams (paediatricians, nursing, dietetics) regarding the provision of care to patients with anorexia nervosa, and support on-going education initiatives within the hospital setting.

A detailed initial assessment is carried out 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.

A detailed psychiatric assessment of the patient will assess for comorbid psychiatric disorders, risk assessment (including for self-harm or suicidal behaviours, aggression or treatment sabotaging behaviours), and formulate a detailed conceptualisation of the presenting illness.

The PLS will advise regarding appropriate therapeutic interventions to support medical assessment and intervention, and advice re psychiatric interventions, including psychological or pharmacological interventions.

The PLS will provide consultation and advice regarding risk management with respect to associated emotional and behavioural disturbances that may occur in patients with anorexia nervosa.

The PLS will provide regular psychiatric review of the patient while admitted Monday – Friday as indicated and arrange review at weekends if required.

Multidisciplinary team members will use their expertise, knowledge and holistic understanding of eating disorders to support parents/carers during a patient's admission. This may include:

- Providing information regarding the care plan approach within the hospital,
- Developing an open and trusting relationship with parents and advocating for their child,
- Providing psycho-education to parents and if appropriate siblings,
- Facilitating psycho-education sessions with the patient and if appropriate siblings,
- Helping parents understand the physiological and psychological impact of the eating disorder on their child,
- Providing information and modelling of appropriate and helpful ways of responding to eating disorder behaviours, to empower them to support their child during meals, and/or at other times of distress.

The PLS will liaise with CAMHS providers regarding the child / adolescent and his/her family. This may be community CAMHS, the CAMHS Eating Disorder Team or a CAMHS Inpatient Team. The PLS will collect information on the patient's past treatment history, information on current interventions within CAMHS, and collaborate with the CAMHS provider to facilitate onward discharge planning to support the patient once he/she is medically fit for discharge, in line with the HSE Model of Care for people with Eating Disorders.

The PLS will provide a discharge report to the CAMHS provider who will be providing the therapeutic input to the patient and family on discharge from hospital. This ensures that the community CAMHS/ Regional CAMHS Eating Disorder Service / CAMHS inpatient team (generic or specialist) will have important relevant information going forward. This should usually be copied to GP.

Section 7: 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 8](#) for information on the Mental Health Act).

[Appendix 1 Junior MARSIPAN Risk Assessment Tool](#)

[Appendix 2 Manual Calculation of QTc](#)

[Appendix 3 Vitamin and Electrolytes Medicines Stock](#)

[Appendix 4 Re-feeding Syndrome and its Treatment](#)

[Appendix 5 Medical Discharge Summary Template](#)

[Appendix 6 Sample of Guidance for Special Observation and Report Sheet](#)

[Appendix 7 Sample of Dietetic Out of Hours Guidance](#)

[Appendix 8 Mental Health Act](#)

[Anorexia Nervosa References and Resources](#)