Nutritional Management of Children and Adolescents with Eating Disorders

For children aged 6 - 17 years presenting in the acute care setting

Purpose

This Guideline provides best practice recommendations for the assessment and initial management of paediatric eating disorder patients presenting in the acute care setting.

Scope

This Guideline provides information for all Children’s Health Queensland (CHQ) employees (permanent, temporary and casual) and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, contractors, consultants and volunteers).

Related documents

Policy and standard(s)


Procedures, Guidelines, Protocols

- Guideline for the management of re-feeding syndrome 0-16years (CHQ-CPG 1.0).
Guideline

Eating disorders in children and young people are associated with significant morbidity and mortality. Early recognition and intervention are key to improved patient outcomes. A number of patients with eating disorders will present in crisis to the emergency department and will require medical stabilisation. This guideline outlines the assessment and initial management of children and young people with an eating disorder.

Recognition of eating disorders

The diagnosis of an eating disorder should be considered when a child:

- Engages in unhealthy weight control practices (e.g. restrictive eating, excessive dieting, laxative misuse, bingeing and induced vomiting).
- Demonstrates obsessive thinking about weight, height, body composition or stage of sexual maturation for gender and age.
- Presents with physical complications of an eating disorder which are not due to another cause.

Admission Criteria

Admission to a Paediatric ward is warranted when a child or adolescent requires medical management as a consequence of medical compromise which cannot be safely managed on an outpatient basis or within a mental health setting. The purpose of the medical admission is to treat their physical condition so that they can be discharged once their medical state has been stabilised. Rapid refeeding (via enteral feeds) is the primary treatment required to achieve medical stabilisation, weight restoration and improved cognitive ability.
Admission to a paediatric ward should be decided based on the outcome of a paediatric assessment as per the current Statewide Guidelines. Inpatient management of a child with an eating disorder requires multidisciplinary involvement including medical, dietetic and psychiatric aspects of care. The child will be in a malnourished state and this will impair their ability to take make informed decisions and take on information/education. Management plans need to be to be set out clearly with the child and their family/carer and repeated on a regular basis. (3-4)

<table>
<thead>
<tr>
<th>Admission Criteria</th>
<th>Anorexia Nervosa</th>
<th>Bulimia Nervosa</th>
</tr>
</thead>
<tbody>
<tr>
<td>• &lt;75% IBW / BMI &lt;5th centile or ongoing wt loss despite intensive outpatient management</td>
<td>• Syncope</td>
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<tr>
<td>• Rapid wt loss (&lt;1kg/week over several weeks)</td>
<td>• Serum potassium &lt;3.2mmol/L</td>
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<tr>
<td>• Refusal of oral intake</td>
<td>• Serum Chloride &lt;88mmol/L</td>
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<tr>
<td>• Resting Pulse &lt;50 bpm</td>
<td>• Oesophageal tears</td>
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<tr>
<td>• Systolic pressure &lt;80mmHg</td>
<td>• Cardiac arrhythmias including prolonged QTc</td>
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<tr>
<td>• Orthostatic changes in pulse (&gt;20bpm) or BP (&gt;10mmHg)</td>
<td>• Hyperthermia</td>
<td></td>
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<tr>
<td>• Dehydration</td>
<td>• Intractable vomiting</td>
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<tr>
<td>• Hypothermia Temp &lt;35.5° C</td>
<td>• Suicidal ideation</td>
<td></td>
</tr>
<tr>
<td>• Arrhythmia on ECG</td>
<td>• Hematemesis</td>
<td></td>
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<tr>
<td>• Any electrolyte abnormalities</td>
<td></td>
<td></td>
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<tr>
<td>• Hypoglycaemia</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data from Refs. (3,5-7)

**Ideal Body weight (IBW):**

- To calculate IBW: plot wt and ht centile (e.g. If ht is on the 75th centile, IBW is equal to wt on the 75th centile).
- IBW is not to be reported back to patient. It is to be used as a guide for the treating team only.
- To calculate %IBW = (current wt/ Ideal wt) x 100

**Assessment of children with suspected eating disorders**

Identify and assess if the child is at risk of re-feeding syndrome. Refer to Guideline for the management of refeeding syndrome 0-16years (CHQ).

1. In addition to the above assessment, the following is required relating specifically to eating disorders:
   I. History: Identification of abnormal thinking about weight, body image, diet and exercise as well as; menstrual, social and family assessment. It is strongly advised to seek collateral history from parents/caregivers of the child in order to verify information provided by the child.
   II. Examination: Pubertal development, signs of recurrent vomiting/purging, mental health risk and additional features of severe malnutrition
   III. Baseline investigations.

2. Full nutrition assessment

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Children’s Health Queensland Hospital and Health Service
3. Differential diagnosis

4. Diagnosis

**History**

### Identifying abnormal thinking about weight, body image, diet and exercise

Questions to help explore attitudes towards weight control:

- What do you think is your healthy weight?
- What would you like to weigh?
- Do you think you need to lose more weight?
- Are you afraid of gaining weight?
- Are you unhappy with your body shape?
- Is there any particular part of your body that you are especially unhappy with?
- Do you eat in front of others? If not, when did you stop doing this and why?
- How frequently do you weigh yourself?
- How have you tried to control your weight?
- What type of exercises do you do?
- How much exercise do you do, how often, level of intensity?
- What sorts of foods and drinks do you avoid, and when did you start avoiding them?
- Do you have any ritualised eating habits?
- Do you prefer to eat alone?
- Do you count calories/fat/carbohydrates?
- When young people eat large amounts quickly we call this a binge. Do you ever binge on food? If so, how often? What do you binge on? How much of that would you eat?
- Sometimes when young people are trying to control their weight they use medications or other methods to get rid of food, either by making themselves vomit or by going to the toilet a lot. Have you ever tried this? If so, frequency and amount. Timing in relation to meals?

### Family and social

- Family history: obesity, eating disorders, depression, other mental illness (especially anxiety disorders and obsessive-compulsive disorder), substance abuse by parents or other family members.
- Social history: home life, school life, friends, activities, sexual history.

### Menstrual

- Age at menarche, regularity of cycles, last menstrual period.

### Additional history

Use of cigarettes, drugs, alcohol (heavy use of alcohol increases the requirements for B vitamins.5

- Use of anabolic steroids (especially in boys)
- Use of stimulants
- Involvement with proanorexia ("pro-ana") or probulimia ("pro-mia") Web sites
- History of physical or sexual abuse
- Previous therapies, type and duration

Data from Refs. (5,7-8, 10-11)
Examination

### Pubertal development
- Assessment and documentation of pubertal stage
- Signs of delayed or interrupted pubertal development

### Signs of recurrent vomiting / purging
- Gingivitis and dental caries (erosion of enamel, gum recession and friable gums)
- Hypokalaemia and/or elevated bicarb
- Loss of enamel on surfaces of teeth
- Callouses on dorsum of the hand (Russell’s sign)
- Subconjunctival haemorrhage

### Mental health risk
- Flat or anxious affect
- Suicidality
- Evidence of self-harm
- Family not coping
- Symptoms of depression, anxiety and OCD

### Other features of severe malnutrition
- Lanugo hair
- Dull thinning scalp hair
- Dry skin
- Skin breakdown and/or pressure sore
- Bruising/abrasions over the spine related to excessive exercises
- Muscle wasting (can be proximal and distal)
- Muscle weakness on testing
- Bones, including carefully assessing for lumber crush fractures
- Arrhythmia’s on ECG
- Cardiomyopathy, cardiac failure
- Postural hypotension
- Postural tachycardia
- Bradycardia
- Peripheral oedema
- Hypothermia
- Constipation
- Amenorrhoea

Data from Refs. (2-3, 6-8)
Investigations

To some extent investigations will depend on the need to exclude other diagnoses. For those in whom the diagnosis is clear baseline investigations should include:

- Full blood count
- Liver function tests
- Vitamin B12 and folate
- Plasma zinc
- Thyroid function tests
- Iron studies
- If amenorrhoeic consider urine pregnancy test after discussion with care giver and child
- Additional trace elements – if indicated from history
- Blood gas – if indicated from history
- Bone Mineral Density and Total Body K (Potassium)

Data from Refs. (3,7,10)

Obtain baseline history from: Guideline for the management of refeeding syndrome 0-16years

Differential diagnosis of eating disorders

The key to the diagnosis of eating disorders is abnormal eating behaviour plus disordered thinking and beliefs about weight and body shape. If such abnormal beliefs and behaviours are not present one should give consideration to alternative diagnoses such as:

Gastrointestinal disorders
- Inflammatory bowel disease
- Coeliac disease
- Malabsorption
- Infectious diseases
- Chronic infections (human immunodeficiency, virus infection, tuberculosis, others)

Endocrine disorders
- Hyperthyroidism (hypothyroidism)
- Diabetes mellitus
- Other endocrine disorders (e.g., hypopituitarism, Addison disease)

Other psychiatric disorders
- Obsessive-compulsive disorder and anxiety disorders
- Substance abuse
• Schizophrenia
• Conduct disorder
• Developmental Disorders
• Depression

Other disorders
• Central nervous system lesions (including malignancies)
• Other cancers
• Superior mesenteric artery syndrome (more commonly a consequence of severe weight loss)
• Failure to thrive secondary to neglect or abuse

Data from Refs. (6,9)

Diagnosis and Inpatient Treatment:

Psychologist assessment
In the first instance a referral should be made to the Consultation Liaison Psychiatry Team Intake Officer. If there is no Consultation Liaison Psychiatry team, then refer to the hospital or ward psychologist.

Nutrition assessment
Nutrition assessment should be part of the overall assessment for patients with eating disorders. The dietitian should be responsible for the calculation of energy requirements and nutrition intervention throughout the admission. Each patient will have an individual regime for nasogastric (NG) feeds and meal plans as ordered by the dietitian.

The initial dietetic assessment should only cover those aspects essential to immediate management decisions; this includes data collected from the above history. Most patients are cognitively impaired at low body weights so little insight can be given by the patient. Family/caregivers should be interviewed at this stage to obtain a full history of the development of the eating disorder and current calorific intake. A full nutritional assessment should take place once the patient has avoided refeeding syndrome and is not medically compromised. Known food allergies and religious diets will be respected; unless they clearly have risen during the period of development of the eating disorder.

See Appendix 1: Additional nutrition assessment

Calculation of energy requirements
Energy requirements are determined in two phases; those at risk of re-feeding syndrome and those not at risk and/or post re-feeding syndrome.

Energy requirements for eating disorder patients who are at risk of refeeding syndrome:

\[
\text{[Basal Metabolic Rate (BMR) (using Schofield equation*) x Physical Activity Level (PAL) of 1.3]}
\]

*Increased energy requirements for eating disorder patients who are not at risk of re-feeding syndrome (for weight gain of ~ 0.8-1kg/week)
Delivery of calories is shown below.

At risk of re-feeding syndrome:
1. Ensure multivitamin, Thiamine and Phosphate supplementation
2. NG tube inserted and continuous NG feeding commenced as per flow chart below.

### Physical Parameters

**Day 1-2**
- Any medically compromised patient requiring admission as above
  - Avoid IV fluid boluses and rehydrate slowly over days not hours

**Day 1 IF FOLLOWING CRITERIA MET**
- If Phosphate <1.0
- If dehydrated at presentation (tachycardia, dry membranes, high Urine SG, raised urea/creat or albumin)
- If BMI calculated <14
  - These patients are at higher risk of re-feeding syndrome so are commenced at a lower calorie rate

**Day 2-3**
- Once HR >50bpm during the day
- Electrolytes remain stable on daily bloods (Chem20 including Ca/Mg/Phos)

**Ongoing Days**
- If HR remains >50bpm overnight
- Electrolytes remain stable (Bloods TWICE weekly)
- Core Temp stable overnight

### Enteral Feeding Regime

<table>
<thead>
<tr>
<th>Day 1-2</th>
<th>Day 1 IF FOLLOWING CRITERIA MET</th>
<th>Day 2-3</th>
<th>Ongoing Days</th>
</tr>
</thead>
</table>
| 1. Commence continuous NGT feeds at 80mls/hr. (Nutrison Standard 1cal/ml)  
2. Nil oral intake until dietetic review, can have sips of water. | 1. Commence continuous Glycolyte at 80mls/hr. (1340kCal/24hrs)  
2. Nil oral intake, can have sips of water | 1. Cease daytime NGT feeds  
2. Commence HALF meal plan (1500kCal)  
3. Commence overnight NGT feeds at 100mls/hr. x 10 hours (1 cal/ml Nutrison Standard) | 1. Cease overnight feeds  
2. Commence FULL meal plan (3000kCal) |

If family refuse NG tube, appropriate education should be provided to family to ensure their decision is informed. If NG tube is not inserted, patient should be commenced on Half Meal Plan until dietetic review. Strict nursing supervision should be implemented to ensure patient is receiving and completing 100% of prescribed intake and to monitor for compensatory behaviours.

**Not at risk of re-feeding syndrome:**
1. Half meal plan (with bolus consequences) + overnight feeds (providing total of 3000kcal/day).
   (When the patient can achieve 100% of the Half meal plan for ≥ 2 consecutive days (i.e. not requiring bolus) they can progress onwards)

Full meal plan (with bolus consequences). Nil overnight NG feeds required.
Nasogastric feeding

- Continuous NG feeds should be commenced on Day 1 of admission to prevent further weight loss and medical decline.

- The NG tube should remain in place until the patient is able to take 100% of the prescribed meal plan orally for a consecutive period, usually two days. The NG tube will be re-inserted if the patient fails to comply orally. Full volume of food must be eaten in the set time otherwise a NG bolus is given.

Meal plans

- Whilst patient remains on continuous NG feeds, it is recommended that only sips of water are consumed orally. If the patient reports increased appetite, small snacks can be offered throughout the day to allow for monitoring of daily caloric intake can and to prevent electrolyte imbalance and fluid shifts.

- When the patient has avoided re-feeding syndrome, commence the Half Meal Plan (see Appendix 2) with overnight NG feeds. The half meal plan indicates that approximately half of their prescribed calories should be in the form of an oral meal plan (ie 1500kcal); with the remaining 1500kcal being given overnight via NG feeding;

- Once the half meal plan is tolerated well (ie eating 100% meals orally), cease overnight NG feeds and commence the Full Meal Plan (see Appendix 3). This will provide 3000kcal/d which will provide 100% of requirements.

- The transition from the Half Meal Plan to the Full Meal Plan may take between 2 – 5 days depending on the patient's tolerance/ability to complete meals orally.

- Meal plans are a combination of meals and supplements. All meal plans will require bolus ‘consequences’ assigned next to each main meal and snack. A bolus ‘consequence’ is the equivalent amount of calories given as a bolus if the prescribed amount of food is not eaten or not eaten within the time specifications. Ideally, the bolus ‘consequence’ would be 25% more calories than the food; in an effort to encourage the patient to eat the food portions.

- Patients should be given a copy of the meal plan outlining the prescribed foods and feed type of the bolus ‘consequences’.

- Patients should not be shown or given meal plans with calories or volumes of bolus ‘consequences’ written on them.

- In the initial stages the dietitian must prescribe a very specific meal plan, as the patient will try to negotiate the smallest or lowest calorie equivalent.

- For children who require increased or decreased calories outside of their half and full meal plans; individual meal plans will need to be prescribed by the dietitian. This may also include the use of supplemental paediatric enteral feeds.

Meal time management

At meals and snacks the following should be adhered to:

- Main meals are 30 minutes and snacks are 15 minutes. It is imperative to set firm time limits on meal times as children suffering from an eating disorder often try to extend the amount of time to eat a meal in the hope that the parent/caregiver/nurse will eventually tire in their attempts to get the child to get the full meal.
• There will be minimal food choices/dislikes allowed during the admission. Any disklikes must be approved by dietitian and equivalent food type given as alternative. Staff will not enter into any discussion or negotiation regarding this. The only exception to this is when there is an identified medical/religious/cultural reason for a food not to be given.

• No special dietary requirements (eg vegetarian, gluten free, lactose free) will be approved unless the parents provide medical/appropriate history or documentation supporting the suggested dietary requirements.

• Children need to be monitored on a 1:1 basis while attempting to eat their meal/snack. This allows for direct observation of the amount consumed and does not allow the child with an eating disorder to secrete or dispose of food without ward staff knowledge.

• At the end of the above times any leftover food should be removed and if the meal has not been eaten the child should be given a prescribed bolus as per devised meal plan. It is important that this process is followed, even if the child refuses their meal.

• The child should go to the toilet prior to their meal or snack. This ensures that they have no reason to go to the toilet after a meal and reduces the risk of them purging after food has been consumed. The child may not go to the toilet / bathroom for half an hour after each meal.

• The child will also require a period of “post-meal support” following each main meal and snack. This is to ensure the child does not go to the toilet, engage in any compensatory mechanisms to lose weight (e.g. vomiting, exercise) and to also provide support to the child in what is usually the most distressing periods of the day for them. The recommended time for “post-meal support” is for 1 hour post main meal and ½ hour post all other snacks/meals for the day.

• Check all meals and trays pre and post meals. Record intake on a ‘food and fluid’ chart.

• During medical compromise children will consume their meals from their bed.

See Appendix 3: Helpful hints for nursing staff at meal times

Physical activity
On admission the patient should be informed that they will be on bed rest (resting either on their bed or in a chair). This is non-negotiable and will remain in place while the patient is medically compromised. When vital signs have improved and there are minimal orthostatic changes (as determined by the treating team), bed rest may be lifted.14

Behaviour management
A child or adolescent with anorexia can display forms of extreme anger and persuasiveness towards staff. It is important that staff set firm boundaries and enforce the food and activity prescription. If there are any concerns around self-harm, suicidal ideation or aggression towards staff the treating and Consultation Liaison Psychiatry Team would complete a risk assessment. Any further steps that may be required to manage the risk need to be considered and implemented at ward level. If physical restraint is needed, it is important that it is undertaken by individuals who are specifically trained in this area. The use of physical restraint for the purpose of clinical treatment of the eating disorder will involve the use of the Mental Health Act (MHA). Please see section on “Use of the MHA in Eating Disorder patients” for further information. The use of psychotropic medication is also used to aid in re-feeding and behavioural management in the treatment of eating disorders. If these medications are being considered, it is advisable to contact the Consultation Liaison Psychiatry Team for specialist advice prior to prescribing these medications. In practice,
these are most likely to be psychiatric staff, and appropriate arrangements will need to be made to ensure this.7

Use of the Mental Health Act (MHA) in Eating Disorder patients

The treatment of Eating Disorders is a complex process and will involve a significant input from both medical and psychiatric teams. Frequently, the child with an eating disorder may become visibly distressed and/or physically agitated/aggressive, especially at meal times. As the primary goal of acute medical in-patient treatment of eating disorders is to re-feed the child in order to achieve a medical stable state, the administration of food, whether it be via an oral, bolus or NG route, is paramount. There may be circumstances whereby the child may need to be restrained in order to re-feed or to ensure the safety of the child and/or other patients/staff/family. In the state of Queensland, no child can be physically restrained for the purposes of clinical treatment of an eating disorder without the use of the MHA. If the MHA needs to be invoked, it is advisable to contact the Consultation Liaison Psychiatry Team, in order to seek advice on how to use the MHA correctly and to arrange prompt psychiatric review of the child. Often the need for physical restraint occurs suddenly and it is appropriate for the staff to do whatever they are able in the short term to ensure the child's safety, then as soon as practicable, contact psychiatric services to help in the use of the MHA for that child. If the child is placed under the MHA, the legal guardian of the child will need to be notified as soon as practicable.

Assessment of expected weight

Assessment of expected weight should take into account premorbid weight and height centiles (including growth records during childhood), weight and developmental stage when the eating disorder occurred and weight at loss of menses.15 A minimum target weight should be no less than 90% IBW; this may not always be achieved in an inpatient setting, but should be achieved in the long term.9,16 At 90% IBW most female patients can achieve the return of regular menses. Be mindful of very tall or short patients; as it is possible to over or underestimate weight targets. It is helpful to take into account the 50%ile BMI for age in this patient group. Ongoing weight targets will need to be readjusted every 3 to 6 months to account for growth.15 Please also see section below titled “weight” for further information on how to discuss weights with the child and parents.

A weekly weight gain of 0.5 - 1.5kg per week is generally regarded as optimum in the inpatient setting and for a gradual return to a healthy eating pattern.12-3,15 You might notice some fluctuation week to week and no weight gain during week one during refeeding; however this is the overall goal. Fluid retention and visual oedema can occur in the initial stages of re-feeding, this should resolve in 7-10 days.

Further investigations

- Bone Mineral Density (BMD) – using Dual-Energy X-ray Absorptiometry (DEXA)
- Body Cell Mass (BCM) – using Total Body Potassium (TBK)
- Resting Energy Expenditure (REE)

These are to be ordered upon admission and should occur during the second week (or when the patient is medically stable to be off the ward).

These measures help to determine the patient’s body composition. BMD test measures how much calcium and other types of minerals are in an area of bone.18 Low BMD is a frequent complication of eating disorders leading to increased risk of pathologic fractures and potential irreversible skeletal compromise across the life span. Treatment strategies, such as supplemental estrogen, bisphosphonates, calcium, and vitamin D.
replacement, have not been shown to be consistently effective, are not a substitute for nutritional recovery, and are not recommended for routine use.\(^{(5,19-21)}\)

TBK can be used to predict body cell mass (BCM) (that is, the active growing tissue in the body), and thus nutritional status.\(^{22}\) Low TBK readings represent shrinkage of the BCM and an expansion of extracellular fluid as a result of malnutrition. Parameters usually normalise as a patient’s clinical and nutritional status improves.\(^{23}\) Increases in BCM shows the beginning of recovery and if “adequate” weight has been gained and sustained. Failure to see improvement in BCM after weight gain has plateau around the provisional target weight, means this provisional weight target is too low and a higher weight necessary. Failure to see improvements in BCM over greater periods (i.e. one to two years) suggests that the patients weight is fluctuating is not being maintained at target weight for long enough.\(^{16}\)

REE is measured using an open hood circuit method, whereby inspired oxygen and expired carbon dioxide are used to calculate energy expenditure and respiratory quotient while at rest. The data can be used to inform dietary evaluation and calculation of energy requirements.\(^{22}\)

TBK can be reordered from 2 months and on subsequent admissions ~ every 3-6 months. BMD can be reordered every 6 months to 1 year. REE can be reordered every 6 months or if requested by the dietitian.

**Monitoring**

It is crucial that staff on the paediatric unit are consistent with the above management. The nature of anorexia means that the child will use every opportunity to dis-empower staff through splitting and drawing them into negotiation. It is important to remember that this behaviour is part of the illness and a direct consequence of physical starvation.

<table>
<thead>
<tr>
<th>Test / Observation</th>
<th>Days 1 to 5</th>
<th>Days 5+</th>
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</thead>
<tbody>
<tr>
<td>Serum electrolytes including PO4, K+, Ca2+, Mg2+</td>
<td>Daily</td>
<td>Every 3 days</td>
</tr>
<tr>
<td>(All patients receiving PO4, K+, Ca2+, Mg2+ will require close monitoring for changes in clinical condition such as possible respiratory, muscular and cardiac changes)</td>
<td></td>
<td></td>
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<tr>
<td>Urinalysis and fluid balance</td>
<td>Daily</td>
<td>Daily</td>
</tr>
<tr>
<td>BP</td>
<td>Q4-6h</td>
<td>Daily</td>
</tr>
<tr>
<td>Temperature</td>
<td>Q4-6h</td>
<td>Daily</td>
</tr>
<tr>
<td>Pulse</td>
<td>Q4-6h</td>
<td>Daily</td>
</tr>
<tr>
<td>Cardiac and respiratory function</td>
<td>Q4-6h</td>
<td>Daily</td>
</tr>
<tr>
<td>Administration rates fluids (feeds and IV preparations)</td>
<td>Daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Blood glucose</td>
<td>Q6h</td>
<td>Daily</td>
</tr>
<tr>
<td>Signs of paresthesia, deterioration of strength or mental state</td>
<td>Daily</td>
<td>Daily</td>
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<tr>
<td>Weight and specific gravity</td>
<td>Daily</td>
<td>Bi-weekly</td>
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<tr>
<td>Calorie intake – all food/drinks/supplements are to be recorded. Nursing staff to document in ‘food and fluid’ chart</td>
<td>Daily</td>
<td>Daily</td>
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<tr>
<td>Stools</td>
<td>Daily</td>
<td>Daily</td>
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<tr>
<td>Medication administration -observe carefully that all medications have been taken correctly and if there is concern about this notify the treating team</td>
<td>Upon administration</td>
<td>Upon administration</td>
</tr>
<tr>
<td>Physical activity</td>
<td>Daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Monitor signs of binging such as excess amounts of food being requested from carers and visitors, and food going ‘missing’ from ward supplies, fridges, other patients, etc. may suggest bingeing.(^{5})</td>
<td>Daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Monitor signs of self-harm</td>
<td>Daily</td>
<td>Daily</td>
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<tr>
<td>Monitor signs of purging such as self-induced vomiting in toilets after a meal or a snack</td>
<td>Daily</td>
<td>Daily</td>
</tr>
<tr>
<td>Monitor signs of violent and other disturbed behaviour</td>
<td>Daily</td>
<td>Daily</td>
</tr>
</tbody>
</table>

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Weight

The child will be weighed twice a week (ie. on Monday and Thursday mornings), prior to breakfast. Patients wear hospital pyjamas and must fully void prior to weighing, so that consistent results may be obtained. Urine specific gravity is checked at the same time. It is best if the child does see and is told their weight at the time of weighing. There is often distress associated with this, but it is often transient and actually therapeutic. This distress should be managed with statements such as “I know that the eating disorder is not happy with this weight gain, but it is necessary for [child’s name] recovery”. In some inpatient settings the use of BMI banding is in place; whereby at each weigh the child is told their current BMI band e.g. If the child’s BMI is 15.5kg/m2; they would be in band 15.

Often parents/children will ask what their “goal weight” or “discharge weight” will be. Discussion should be held around the concept of “returning to health” and discussion of physical signs of return to health, such as a stabilisation of physical parameters, improvement in mood and energy levels, improvement in ability to think, less distress around meals and their calorific content or ability of them to increase weight, loss of lanugo hair and return of menses in post-pubescent females.

Discharge

When a child is medically stable then appropriate post discharge follow up treatment will be planned in consultation with the Consultation Liaison Psychiatry Team. The decision to discharge should be made by the responsible paediatric consultant, based on the initial reasons for admission have been addressed including medical parameters such as level of hydration, blood pressure and electrolyte stability. It is suggested that the child not be discharged while they still meet the admission criteria and remain at high medical risk.7

Consultation

Key stakeholders who reviewed this version:

- Dr Robyn Littlewood, Director, Department of Dietetics and Food Services, Children’s Health Queensland
- Dr Melinda White, Dietitian - Consultant, Department of Dietetics and Food Services, Children’s Health Queensland
- Dr Michelle Boyd, Consultant Paediatrician, Children’s Health Queensland
- Dr Peter Lewindon, Consultant Gastroenterologist, Children’s Health Queensland

Definition of terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hematemesis</td>
<td>Forcing stomach contents up through the esophagus and out of the mouth, in which the vomit contains blood.</td>
<td>Medline Plus Medical encyclopaedia. A.D.A.M. Medical Encyclopedia [online], Atlanta (GA): A.D.A.M., Inc.; ©2005</td>
</tr>
<tr>
<td>Hypokalemia</td>
<td>Lower-than-normal amount of potassium in the blood</td>
<td>Medline Plus Medical encyclopaedia. A.D.A.M. Medical Encyclopedia [online], Atlanta (GA): A.D.A.M., Inc.; ©2005</td>
</tr>
<tr>
<td>Tachyarrhythmia</td>
<td>A rapid heartbeat. A newborn is considered to have tachycardia if the resting rate is more than 160bpm and a teenager more than 90bpm.</td>
<td>Medline Plus Medical encyclopaedia. A.D.A.M. Medical Encyclopedia [online], Atlanta (GA): A.D.A.M., Inc.; ©2005</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Syncope</td>
<td>Alternatively known as fainting. A brief loss of consciousness due to a drop in blood flow to the brain. The episode lasts less than a couple of minutes and you recover from it quickly and completely.</td>
<td>Medline Plus Medical encyclopaedia. A.D.A.M. Medical Encyclopedia [online], Atlanta (GA): A.D.A.M., Inc.; ©2005</td>
</tr>
<tr>
<td>Lanugo hair</td>
<td>A soft, downy body hair that develops on the chest and arms of anorexic women</td>
<td>Gale Encyclopedia of Medicine. The Gale Group, Inc.; ©2008</td>
</tr>
</tbody>
</table>

References and suggested reading

22. CNRC 2009 University of Queensland, Body composition

CHO-GDL-00505 – Nutritional Management of Children and Adolescents with Eating Disorders: For children aged 6 – 17 years presenting in the acute care setting.
Children’s Health Queensland Hospital and Health Service

Guideline revision and approval history

<table>
<thead>
<tr>
<th>Version No.</th>
<th>Modified by</th>
<th>Amendments authorised by</th>
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<tbody>
<tr>
<td>1.0</td>
<td>Melinda White, Dietitian – Consultant Dietetics and Food Services</td>
<td>Robyn Littlewood, Director Dietetics and Food Services</td>
<td>Dominic Tait, Divisional Director Division of Clinical Support</td>
</tr>
</tbody>
</table>

Keywords

Anorexia, Anorexia nervosa, Eating Disorder/s, Re-Feeding, Refeeding, Malnutrition, Underweight, Weight loss, EDNOS (Eating Disorder Not Otherwise Specified)

Accreditation references

EQuIP National Standards: Standard 12, Provision of Care
Appendix 1 Additional Nutrition Assessment

This assessment explores additional nutrition information to that already covered by the initial history. This should be completed by a Dietitian.

Food patterns
Analyse dietary intake and discuss any missing food groups and rigid eating patterns. Determine sizes of meals (are foods cut into small pieces?), speed of eating meals, sauces, condiments?

Preparation
Determine who buys and prepares the food as well as family norms about food? Does the child collect/look for recipes or watch food channels?13

Caffeine consumption
Determine the amount of caffeine the child has, in the form of coffee, tea or energy drinks. (Caffeine consumption is common in anorexia nervosa, because caffeine has an appetite-suppressant.22

Vegetarianism and Veganism
A careful history of the development of vegetarianism or veganism the detail of its practice and its place in the individual’s social, cultural and religious environment is necessary. Vegan diets are a lower energy density than the average diet. It will be difficult to achieve weight restoration on a vegan diet. Iron is not as well absorbed from vegetables as from animal foods. Calcium intake may also be lower in vegan diets. If vegetarianism or veganism develops alongside the eating disorder, it is justifiable to consider it as part of the psychopathology and should be challenged.22

Religious and cultural issues
Many religions, including Judaism, Christianity, Hinduism, Buddhism and Islam, include some dietary exclusion or periods of fasting as part of religious observance.21 Advice from an appropriate minister of religion or cultural adviser may be needed. If an individual excludes some foods from the diet as part of religious observance, and belongs to a religious community whose members all share such a diet, the patient should be allowed to continue do so. Even recently acquired religious dietary restriction, not observed by the patient’s family and social circle, should normally be respected. Challenges to religiously based dietary restrictions should be made only on very clear grounds, and with sensitivity. Religious dietary requirements should be respected during hospital treatment, as they would be for any other patient. Although many religions permit relaxation of dietary restrictions during illness, many individuals prefer to continue them. This should generally be respected unless it presents a threat to treatment and recovery.22

<table>
<thead>
<tr>
<th>Nutrition warning signs in eating disorder patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Reduced spontaneity and flexibility concerning food intake</td>
</tr>
<tr>
<td>- Avoidance of specific foods</td>
</tr>
<tr>
<td>- Poor food variety</td>
</tr>
<tr>
<td>- Statements about being or eating “healthy”</td>
</tr>
<tr>
<td>- Avoidance of social situations with food</td>
</tr>
<tr>
<td>- Abnormal speed of eating a meal</td>
</tr>
<tr>
<td>- Attempt to “bargain” about foods (e.g. I will eat this if I do not have to eat that)</td>
</tr>
</tbody>
</table>

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• Inability to identify hunger or satiety
• Unusually small portions
• Interest in recipes, food channels, and food shopping
• Prepares food for other people without eating themselves
## Appendix 2  Half and full meal plans with bolus ‘consequences’

### Half Meal Plan - 1500kcal

**Date:**

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
</tr>
</thead>
</table>

**HALF MEAL PLAN**

**Meal Plan Assumptions:**

- Main meals must be consumed in 30 mins and snacks in 15 mins.
- Full cup of fluid must be consumed at each meal and snack. If not specified, can choose fluid option.
- Can have an additional cup of Water if Calorie drink is consumed in full.
- All dairy is full cream.
- All bread/toast must have butter or margarine.
- Any meals that come with gravy or sauces need to be consumed.
- If unable to complete Option 1, an extra 10 mins given to consume Oral supplement drink.
- If unable to complete Option 2 orally, young person will receive remainder of Oral supplement drink via NGT.

**Food dislikes:**

1. 
2. 

**Food dislikes cannot** be whole food groups and cannot change throughout admission.

**Culture/Allergy considerations:**

<table>
<thead>
<tr>
<th>Option 1 – Plated Meal</th>
<th>Option 2 – Oral Supplement Drink</th>
<th>Option 3 – NGT Bolus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breakfast</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 packet of cereal + 120ml full cream milk</td>
<td>1 x Resource Plus</td>
<td>Remainder of Supplement</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 piece of toast with margarine + spread +AND 1 serve fruit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+DRINK: 1 cup full cream milk</td>
<td>1 x Sustagen</td>
<td>Remainder of Supplement</td>
</tr>
</tbody>
</table>

**Morning Tea**

3 Jatz + 1 slice of cheese
1 x Fruit
OR
1 x Fruit
1 x tub yoghurt +DRINK: 1 cup water

**Lunch**

1x sandwich supplied from (must have meat, chicken, tuna, cheese or egg) +DRINK: 1 cup cordial/juice

**Afternoon Tea**

3 Jatz + 1 slice of cheese
1 x serve fruit
OR
1 x Fruit
1 x tub yoghurt +DRINK: 1 cup water

**Dinner**

Full meal from ward which must include portion of meat, chicken, fish (or other protein – cheese/egg) AND potato, rice or pasta + DRINK: 1 cup cordial/juice

**Supper**

DRINK: 1 x Sustagen

<table>
<thead>
<tr>
<th>Clinician signature:</th>
<th>1 x Sustagen</th>
<th>Remainder of Supplement</th>
</tr>
</thead>
</table>

Children’s Health Queensland Hospital and Health Service
## Appendix 3  Additional Nutrition Assessment

### Full Meal Plan - 3000kcal

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
</tr>
</thead>
</table>

**FULL MEAL PLAN**

<table>
<thead>
<tr>
<th>Meal Plan Assumptions:</th>
<th>Option 1 – Plated Meal</th>
<th>Option 2 – Oral Supplement Drink</th>
<th>Option 3 – NGT Supplement</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Main meals must be consumed in 30 mins and snacks in 15 mins.</td>
<td><em>If 100% NOT completed, in allocated time frame then go to Option 2.</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Full cup of fluid must be consumed at each meal and snack. If not specified, can choose fluid option.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Can have an additional cup of Water if Calorie drink is consumed in full.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All dairy is full cream.</td>
<td>Breakfast</td>
<td>2 x Sustagen</td>
<td>Remainder of Supplement</td>
</tr>
<tr>
<td>• All bread/toast must have butter or margarine.</td>
<td>1 box cereal + 120ml full cream milk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Any meals that come with gravy or sauces need to be consumed.</td>
<td>1 serve fruit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If unable to complete Option 1, an extra 10 mins given to consume Oral supplement drink.</td>
<td>1 piece of toast with margarine and spread</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If unable to complete Option 2 orally, young person will receive remainder of Oral supplement drink via NGT.</td>
<td>+DRINK: 1 cup full cream milk + Milo</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Food dislikes:**

1. 
2. 

**Food dislikes cannot be whole food groups and cannot change throughout admission.**

**Culture/Allergy considerations:**

**Clinician signature:**

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>1 serve fruit</th>
<th>2 x Resource Plus</th>
<th>Remainder of Supplement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 box cereal + 120ml full cream milk</td>
<td>3 Jatz + 2 slices of cheese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 serve fruit</td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 piece of toast with margarine and spread</td>
<td>2 x tub yoghurt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+DRINK: 1 cup full cream milk + Milo</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Morning Tea</th>
<th>1 serve fruit</th>
<th>2 x Sustagen</th>
<th>Remainder of Supplement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Jatz + 2 slices of cheese</td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 serve fruit</td>
<td>2 x tub yoghurt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+DRINK: 1 x Sustagen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lunch</th>
<th>6x triangles of sandwiches supplied from ward (must have meat, chicken, tuna, cheese or egg)</th>
<th>2 x Resource Plus</th>
<th>Remainder of Supplement</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 1x fruit</td>
<td>+DRINK: 1 cup full cream milk + Milo</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Afternoon Tea</th>
<th>1 serve fruit</th>
<th>2 x Sustagen</th>
<th>Remainder of Supplement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Jatz + 2 slices of cheese</td>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 serve fruit</td>
<td>2 x tub yoghurt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+DRINK: 1 x Sustagen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dinner</th>
<th>Full meal from ward which must include portion of meat, chicken, fish (or other protein – cheese/egg) AND potato, rice or pasta</th>
<th>2 x Resource Plus</th>
<th>Remainder of Supplement</th>
</tr>
</thead>
<tbody>
<tr>
<td>+DRINK: 1 cup Cordial/ juice + DESSERT (No Jelly unless with ice cream)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supper</th>
<th>1 serve of fruit</th>
<th>1 x Sustagen</th>
<th>Remainder of Supplement</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRINK: 1 x Sustagen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Children’s Health Queensland Hospital and Health Service
### Appendix 4  Helpful hints for nursing staff at meal times

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Staff responses</th>
</tr>
</thead>
</table>
| Attempts to draw staff into negotiations or arguments regarding food choices and dislikes | Consistently and calmly remind the child of the rules set out at admission and that this is not open to discussion  
Dislikes of food are not allowed during treatment unless there is an established medical/religious/cultural reason for this. In the majority of cases the dislike can be directly linked to the onset of the eating disorder and allowing these continues the power of the eating disordered thinking. Initially there may be resistance to this but if staff persist with this approach the child will eventually comply. |
| Evidence of using mediums to avoid food / eating at mealtimes             | Attempt to direct the conversation away from the argument or if the child is persistent do not continue to answer the same question.  
It is not unusual for young people with anorexia to use mediums such as watching TV, listening to music, engaging in conversation to avoid eating. If this is apparent then such mediums should not be available during mealtimes. |
| Parents engage in negotiations with staff re food choices and are on the ward prior to mealtimes | Explain to the child that you are concerned that the TV / Music/conversation are being used by the eating disorder to avoid eating and that they will not be available. |
| Wearing of baggy clothes and long sleeves.  
Constantly wiping their hands on bedcovers, clothes during meals.  
Dropping food on to the floor.  
Crumbling food up or letting it drop off the side of the plate.  
A child with anorexia may exhibit all or some of the above behaviours. They are not always aware that they are doing them, although they may also be very skilled at using every opportunity to dispose of food. Consequently staff need to be extra vigilant during mealtimes for any signs of attempts to get rid of food. See “meal time management” section above. | Trained staff to supervise all meals. This is to ensure that the child is not able to dispose of food. A member of staff should be sat with the child for the duration of their meal or snack.  
The child needs to be firmly told that if they attempt to dispose of food during the meal then the entire meal it will be replaced by staff or consequence bolus will be given.  
Long sleeves need to be rolled up if staff are concerned that food is being hidden inside them.  
All crumbs on the plate need to be gathered together and eaten at the end of the meal. |
| Screaming, shouting, throwing of food and / or objects.  
A child’s level of distress at mealtimes can be very high and the above behaviour is often driven by the sheer terror of having to eat, but can often leave staff feeling powerless and distressed themselves. | Continue to be firm and persistent, calmly telling the child that you understand their distress, but they need to eat their food.  
Any thrown food is to be replaced either by other food or an Ensure as per dietetic food plan.  
Staff to seek support of colleagues if the level of distress is overwhelming and difficult to manage. |
Encouraging Completion of Meals

It can be difficult to know how to respond to the child’s resistance at mealtimes and staff can often feel very powerless in being able to get them to eat. A useful technique for staff and parents is to “externalise” the eating disorder. Externalisation allows staff/parents and hopefully the child to see the eating disorder as separate and distinct from the child: it is not the child that is refusing to eat; rather it is the eating disorder that is preventing them from completing the meal. This technique can greatly help in reducing the often high levels of anger and frustration that staff and parents have towards eating disordered patients and allows the staff/parents to be both supportive of the child and also firm with the eating disorder. The following responses can be helpful at mealtimes and may often need to be repeated at regular intervals.

- “You need to pick up your knife and fork / spoon and begin to eat"
- “You need to eat your food as it is part of your prescribed treatment here”
- “I am not prepared to get into any discussion with the eating disorder about the food – I am telling you to eat it”
- “I cannot get into discussion with the eating disorder regarding how much you are to eat – you are expected to eat all of the food”
- “I am reminding you that you have .......... minutes left to eat your food. You need to put the food in your mouth and eat it”
- “I can see that the eating disorder is making it hard for you to completing your meal. I want you to know that we are not going to allow the eating disorder to control you and we may need to take control from the eating disorder by giving you a bolus if the meal is not completed”

Although the above phrases sound very mechanical, repeating them in as neutral a tone as possible gives the child a clear message that they cannot manipulate you, and that you are in charge. If they attempt to engage you in arguing about the meal give them a clear message that you are not prepared to discuss this.

Eating disorder patients also invoke a lot of angst and frustration in treating clinicians. This, combined with the often high levels of anxiety in both the parents and child with the disorder, can lead to frequent ruptures in the development of therapeutic alliance between the treating team and the child and their parents. It is strongly recommended that the treating team arrange to have regular, consistent meeting times with the family and child to discuss the progress of treatment, the treatment plan and any concerns they may have with the treatment plan. This will limit the amount of “splitting” that can occur between the treating team and the families of the child and also between members of the treating team.