

# A guide to admission and inpatient treatment for people with eating disorders in Queensland

## Acknowledgements

This guide has been developed following a literature review (1-14) and key stakeholder consultation encompassing clinicians from mental health services, general medical services, and emergency departments, as well as general practitioners.

## Background

Eating disorders are associated with significant psychiatric and medical morbidity. Effective management of affected patients requires close collaboration between clinicians working in psychiatric and medical settings. The overarching principle that guides the management of patients with eating disorders within Queensland Health (QH) is that patients have access to the level of health service they require as determined by their medical and mental health needs. In practical terms this means that patients have a right to access medical and mental health services across the continuum of care including community, inpatient and specialist services.

## Objectives

The aims of these guidelines are to provide recommendations to assist treating teams

- to manage the medical and psychological risks and needs of people with eating disorders
- to promote coordinated care with a smooth transition across medical, mental health and specialist services.
- to encourage state-wide consistency in treatment and management

## EDOS

EDOS is available to provide assessment and support for treating teams using treatment protocols developed jointly by EDOS and the specialist adult eating disorders inpatient team at the Royal Brisbane and Women's Hospital (RBWH). EDOS can also facilitate access to specialist beds at the RBWH if a trial of local treatment with EDOS input has not been able to achieve treatment goals.

## Goals of Inpatient Treatment

The goals of inpatient treatment include (in the following order): medical stabilisation; prevention and treatment of re-feeding syndrome; weight restoration; and reversal of cognitive effects of starvation prior to outpatient psychotherapy.

## Physical indicators for admission to inpatient beds

Table 1 was developed following reviews of current literature and the guidelines utilised by EDOS for safe and effective treatment of inpatients with an eating disorder, and further consultation with all Qld Directors of Medicine, Emergency Medicine and Mental Health. The table lists physical parameters that are relevant in considering whether psychiatric versus medical admission is indicated. If any parameter is met at the time of assessment, inpatient treatment is advised in accordance with the Royal Australian and New Zealand College of Psychiatrists guidelines (II). The list in the table is not exhaustive; therefore any other medical problems which are of concern should be discussed with the relevant medical team.

	<b>Psychiatric admission indicated<sup>Ⓐ</sup></b>	<b>Medical admission indicated<sup>Ⓑ</sup></b>
	<b>(bold parameters highlight adolescent criteria that are different to those for adults)</b>	
<b>Weight</b>	Body Mass Index (BMI) 12-14 <b>(75-85% IBW, see IBW Ready Reckoner)</b>	BMI <12 <b>(&lt;75% IBW, see IBW Ready Reckoner)</b>
<b>Weight loss</b>	Rapid weight loss (i.e. 1 kg/wk over several weeks) or grossly inadequate nutritional intake (<1000kCal daily)	
<b>Re-feeding risk</b>	Low	High
<b>Systolic BP</b>	<90 mmHg ( <b>&lt;80 mm Hg</b> )	<80 mmHg ( <b>&lt;70 mm Hg</b> )
<b>Postural BP</b>		>20 mmHg drop with standing
<b>Heart rate</b>		≤40 bpm ( <b>&lt;50 bpm</b> ) or > 120 bpm or postural tachycardia > 20bpm
<b>Temp</b>	<36.0	<35.5 or >38°C
<b>12-lead ECG</b>	Normal sinus rhythm	Any arrhythmia including QTc prolongation, or non-specific ST or T-wave changes including inversion or biphasic waves
<b>Blood sugar</b>		<3.0 mmol/L
<b>Sodium</b>	<130 mmol/L*	<125 mmol/L
<b>Potassium</b>	Below normal range	<3.0 mmol/L
<b>Magnesium</b>		Below normal range
<b>Phosphate</b>		Below normal range
<b>eGFR</b>	>60 <sup>ml/min/1.73m<sup>2</sup></sup> and stable	<60 <sup>ml/min/1.73m<sup>2</sup></sup> or rapidly dropping (25% drop within a week)
<b>Albumin</b>	Below normal range	<30 g/L
<b>Liver enzymes</b>	Mildly elevated	Markedly elevated (AST or ALT >500)
<b>Neutrophils</b>	<1.5 x 10 <sup>9</sup> /L	<0.7 x 10 <sup>9</sup> /L
<b>Other</b>	Not responding to outpatient treatment	
<i>* Please note, any biochemical abnormality which has not responded to adequate replacement within the first 24 hours of admission should be reviewed by a Medical Registrar urgently</i>		

Table 1: Physical indicators for psychiatric and medical inpatient admission of patients with an eating disorder.

<sup>Ⓐ</sup> Psychiatric admission is indicated if BMI <14 for adults or 75-85% IBW for adolescents, or there are other abnormalities of physical parameters that are not of sufficient severity to warrant medical admission.

<sup>Ⓑ</sup> In some cases, as indicated in the column of indicators under the 'Medical admission' heading, an initial medical admission is indicated. Generally speaking, this is recommended if BMI <12 for adults or weight is <75% IBW for adolescents, or there are significant abnormalities of physical parameters.

## Guidelines for transfer from medical ward to mental health ward

If a patient with an eating disorder requires a medical admission, the following criteria should be met before transfer from that ward:

### 1. The risk of refeeding syndrome has passed (7-10 days from commencement of refeeding)

The first two weeks of refeeding pose the greatest risk to the patient with an eating disorder. Potential biochemical abnormalities include hypokalaemia, hypophosphataemia, hypomagnesaemia and hypocalcaemia: thus patients must be monitored for electrolyte disturbance on a daily basis and urgent replacement instituted if indicated. A cardiovascular review and ECG should also be performed regularly to detect cardiovascular manifestations of refeeding syndrome. A routine daily thiamine injection (300mg IVI) in the first three days of treatment is essential.

Some patients rapidly develop peripheral oedema and cardiac failure, and this should be suspected in the presence of rapid weight gain. The risk of heart failure in refeeding syndrome is reduced by gradual realimentation. The Eating Disorders Outreach Service is also able to provide written guidelines (see attached appendix: inpatient treatment guidelines) and weekly advice and support to the treating team in all aspects of treatment including management of re-feeding syndrome.

There should be clear evidence that the patients have received adequate nutrition evidenced by medical stabilisation, and be receiving full energy requirements for weight restoration.

### 2. All patients should be medically stable for a minimum of 24 hours prior to transfer.

Electrolyte disturbances such as hyponatraemia, hypokalaemia, hypocalcaemia, and hypochloraemia may reflect ongoing vomiting or laxative abuse, water-loading, or a total body deficit due to chronic starvation. Although phosphate and magnesium levels may initially present within the normal range, they often drop precipitously during refeeding. Thiamine deficiency is common and can be expected to worsen during re-feeding, and requires replacement from the time of admission (See Appendix: Initial Management Guidelines). Despite prolonged starvation, hypoalbuminaemia is rare in anorexia, and should prompt a search for occult infection. Haematological complications result from bone marrow suppression, and include anaemia, neutropenia (relatively common in anorexia), and thrombocytopenia.

Cardiovascular complications include sinus bradycardia, hypotension, impaired myocardial performance, mitral valve prolapse and sudden death. ECG abnormalities in eating disorders (particularly anorexia) include bradycardia, low QRS, P and T wave voltages, ventricular tachyarrhythmias, non-specific ST-T changes, presence of U waves, and prolongation of the QTc interval. QTc interval prolongation has been suggested to increase risk of sudden cardiac death, and ventricular arrhythmias are a major cause of death in anorexic patients. QTc interval prolongation does not necessarily reflect underlying biochemical derangement, and studies have demonstrated QTc interval prolongation in individuals with normal electrolyte levels and demonstrated no correlation between BMI and QTc interval.

Orthostatic pulse or blood pressure changes can be indicative of either dehydration or malnutrition. Postural tachycardia of > 20bpm persisting for more than 7-10 days with consistent nutrition is less likely to be associated with medical compromise, and so should not preclude transfer to a mental health ward if the treating physician has established that the patient is medically stable.

3. **Patients should ideally be at a BMI of 14 (>75%IBW for adolescents) before transfer to a mental health ward**, though transfer can occur with BMI between 12 and 14 if there is agreement between the medical and mental health units, and the patient has been medically stable for at least 24 hours as evidenced by:
  - Systolic BP 90mm (>80mm) or above
  - Heart Rate >50 and <100 bpm
  - No significant postural tachycardia or hypotension
  - Patient has been on goal nutrition for at least 48hrs
  - Normal ECG
  - Normal electrolytes
4. **All patients admitted to medical wards should receive assessment by the local Consultation Liaison Psychiatry team, and EDOS or local eating disorder specialists where appropriate, with these teams providing ongoing advice and support to the treating medical team as required.**

The **local mental health consultation-liaison team** should ensure adequate, regular and frequent (up to daily if required) support is provided to the medical team to assist them with behavioural and psychological management. The mental health C/L team can interview patient and family for collateral information and support; provide advice and support to medical staff on how to manage challenging behaviours, and can coordinate attendance of EDOS staff at team reviews either in person or via telephone.

EDOS will consult with the medical and mental c-l team at least weekly by face-to-face meeting or by tele/video-conference. Specialised eating disorders support and training can also be accessed via EDOS.

## **Guidelines for admissions to, and discharge from, adult mental health inpatient units**

1. The receiving inpatient mental health treatment team should be consulted, and have input into the treatment plan prior to admission.
2. The mental health treating team should have timely access to advice and support from the local department of medicine, including transfer back to a medical bed if indicated.
3. All treating teams can access EDOS for advice throughout treatment.
4. If the patient is admitted directly to a mental health unit, monitoring and treatment of refeeding syndrome should be undertaken in the first two weeks as per the guidelines for medical admission.
5. Patients should be at a BMI of 17-20 before discharge.

6. All patients should be linked in to appropriate medical and mental health follow up, with a discharge summary provided to the receiving service, and a documented individualised treatment plan developed in consultation with the consumer and the follow up agencies. Please note that EDOS can help to facilitate referral to appropriate services.
7. Patients are to be transferred to a specialist eating disorders bed at the RBWH if the criteria below are met, and a bed is available.

## **Criteria and guidelines for transfer to RBWH adult specialist eating disorders beds**

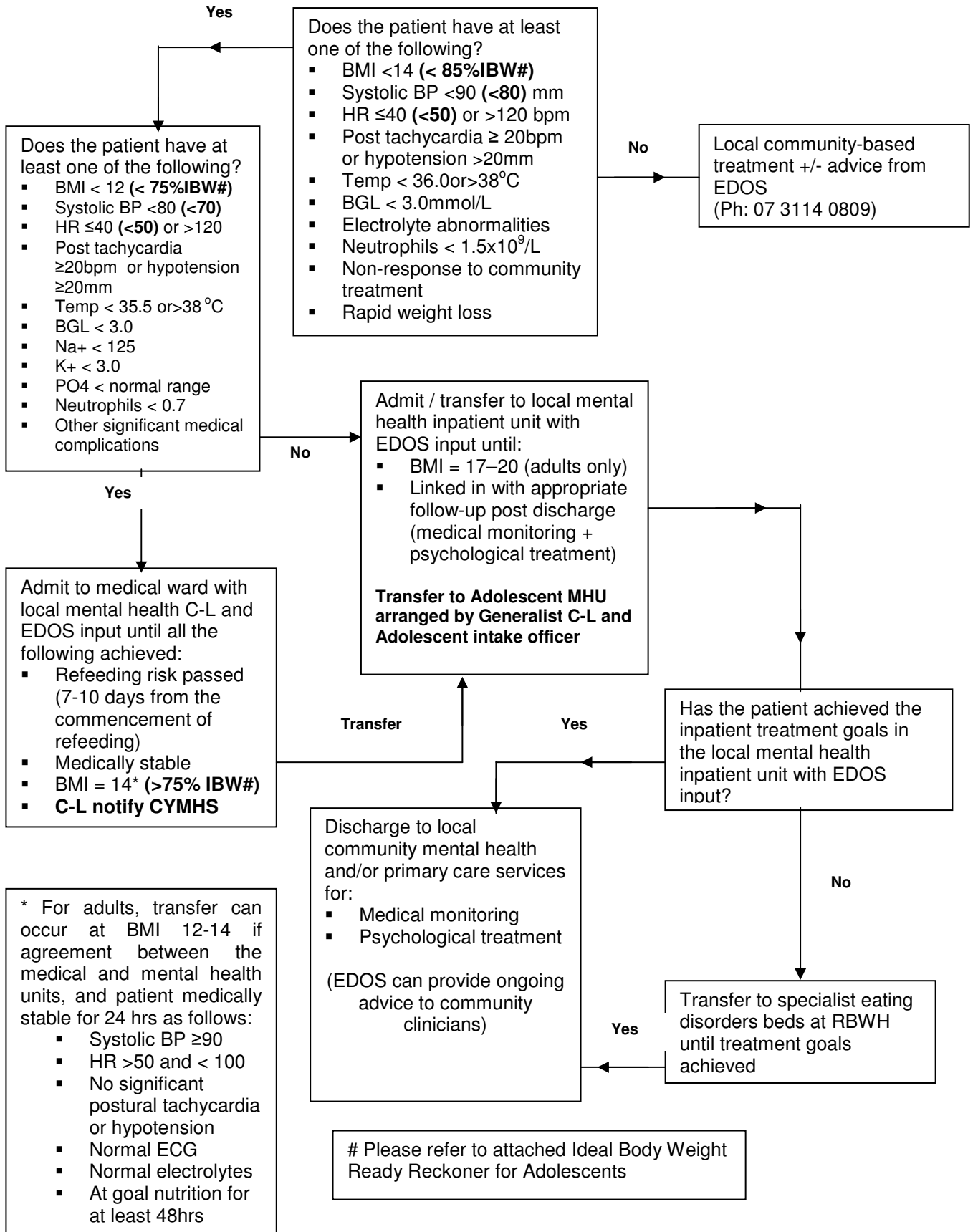
1. The patient has been offered a trial of treatment in their local mental health inpatient unit with input from EDOS.
2. Despite EDOS support, the goals of inpatient treatment have not been met.
3. EDOS agrees to the transfer to a specialist eating disorders bed at the RBWH, and has developed a written treatment plan in consultation with the consumer, family and referring team.
4. The local service agrees to maintain ongoing contact with the patient during the admission, and provides follow up treatment on discharge.
5. If the local service has two or more patients admitted with an eating disorder on any one ward, high priority will be given to transfer.

Further copies of this document can be found at

[http://hi.bns.health.qld.gov.au/mental\\_health/eating\\_disorder/documents/edos-inpat-qld.pdf](http://hi.bns.health.qld.gov.au/mental_health/eating_disorder/documents/edos-inpat-qld.pdf)

# Flowchart of admission pathways for patients with eating disorders.

*Bolded parameters in the chart highlight adolescent criteria that are different to those for adults*



# Eating Disorder Outreach Service Initial Management Guidelines

These guidelines have been developed following a review of the relevant literature by the QH Statewide Eating Disorders Outreach Service (EDOS) in conjunction with key stakeholders.

The Eating Disorders Outreach Service (EDOS) provides a consultation liaison service to Queensland hospitals with the goal of increasing the capacity of local services to manage patients with eating disorders and who are considered to be at risk of re-feeding syndrome. A time can be arranged to meet with your team to provide assessment and treatment recommendations as soon as possible.

**TO MINIMISE THE RISK OF RE-FEEDING SYNDROME IT IS RECOMMENDED YOUR TEAM COMMENCE THESE INSTRUCTIONS IMMEDIATELY**

## Medical Management

- Commence supplemental thiamine (300mg daily IVI first 3 days, then oral) and multivitamins prior to nutrient delivery.
- It is strongly advised that the patient has medical monitoring for at least the first 7–10 days of re-feeding
- Immediately - FBC, E/LFTs, phosphate, Mg, ECG, B12/folate, TFTS and other investigations as indicated by clinical findings
- Daily E/LFTs, phosphate, Mg, ECG are necessary until goal energy intake is reached. Immediately replace K, PO<sub>4</sub>, Mg if these are found to be deficient
- BSL q 4 hours for patients on nasogastric feeds. Patients on oral meal plans should be carefully monitored for hypoglycemia qid, being early morning (eg 0200hrs), and 1 – 2 hrs after main meals, as low glycogen stores and an abnormal insulin response may lead to post-meal low BSLs, and low BSLs in the morning/overnight.
- **Hypoglycaemic episodes often occur in the early re-feeding stage of severely malnourished clients. Low BGLs (<4.0mmol/l) should be managed according to the document 'Insulin Subcutaneous Order and Blood Glucose Record Adult (that include Guidelines for Medical Officer responding to Blood Glucose Alerts and Hypoglycaemia Management in Diabetes: BGL less than 4 mmol/L'.** However, in view of the risk of excess simple carbohydrate precipitating re-feeding syndrome and rebound hypoglycaemia in these patients secondary to inadequate glycogen stores, wherever the above document recommends giving a fast acting carbohydrate, a slow acting carbohydrate (eg. one of the following: Tetrapak or Resource Plus/Ensure Plus/Fortisip/glass milk and crackers), should be given in addition at the same time.



## Nutritional Management

The following nutritional recommendations are supported by papers published in the adolescent eating disorder field <sup>1,2,3,4,5</sup>, and expert opinion of those working with adults. The recommendations are aimed at optimising medical stability, while reducing medical risk, time to goal energy, and length of admission.

All patients should commence feeding at 1500kcal / 6300kJ per day as outlined below, and measured weight should not be discussed with the patient.

### Medical admissions

- Recommend commence 24hr continuous nasogastric feeds delivering 1500kcal / 6300kJ using a low fibre, energy dense (1.5kcal/ml or 6.3kJ/ml recommended) enteral feed. The commencement of nasogastric feeds should not be delayed, and can be prescribed by a medical officer whilst awaiting dietitian consultation.
- Fluid requirements should be calculated according to age and weight. Limit oral water intake to 250ml/day. No other oral liquid or food, apart from that required for medication or hydration purposes, is to be taken whilst on nasogastric feeds.
- If nasogastric feeding is not possible, or while awaiting nasogastric tube placement or the commencement of nasogastric feeds, the patient should be promptly provided with an oral liquid meal plan as outlined below for the interim:

#### 6300kJ Default Liquid Meal Plan

Breakfast 0730: 1 bottle/tetrapak of Fortisip, or Resource Plus or Ensure Plus (200-237ml)

Morning Tea 1000: ½ bottle/tetrapak of above

Lunch 1230: 1 bottle/tetrapak of above

Afternoon Tea 1530: ½ bottle/tetrapak of above

Dinner 1730: 1 bottle/tetrapak of above

Supper 1930: ½ bottle/tetrapak of above

Late Supper 2130: ½ bottle/tetrapak of above

- See [Ongoing Management Guidelines](#) for progression of feeding.

### Mental Health admissions

- Commence a 1500kcal / 6300kJ oral meal plan as outlined below. Implementing the use of high protein liquid supplements, taken orally or via nasogastric bolus (as per the 6300kJ default liquid meal plan above) is strongly recommended if the patient consumes less than 100% at any meal or snack.
- No food is allowed to be brought in from outside/home, nor are diet foods, lollies or chewing gum as these can be used to diminish appetite and/or may have a laxative effect

#### 6300kJ Default Meal Plan

BF: 1 cereal with 1 Milk, and 1 fruit

MT: 1 yoghurt (175-200g) or 1sustagen or 1 Breaka etc

L: 1 Main Meal Option (salad, sandwich, or hot meal option)

AT: 1 yoghurt or 1sustagen or 1 Breaka etc

D: 1 Main Meal Option (salad, sandwich, or hot meal option)

S: 1 yoghurt or 1sustagen or 1 Breaka etc



# Nursing Management

- No leave off the ward due to medical risk
- Observations
  - QID lying & standing **blood pressure and pulse**. Staff should notify RMO if:
    - Pulse is below 50bpm,
    - Temp below 35.5c, and/or;
    - Systolic BP below 90 (**adolescent < 80**), or if;
    - Significant postural drop of more than 10mmHg or postural tachycardia
- BSL q 4hours. Treat blood glucose levels of <4.0mmol/l as per Medical Management.
- Daily ECG
- Patient requires full bed rest if medically unstable (supervised bathroom privileges are supported unless the treating physician is concerned that this would be unsafe)
- Accurate assessment of the patient's nutritional status and eating behaviours
  - Weight:
    - Measure and record, weight, height & urine specific gravity the morning after admission at 6.30am after voiding, and repeat each Monday and Thursday using the same set of scales for each weight measure
  - Height:
    - Should be measured in early morning, check patient is standing at full height
  - Bowel chart: record bowel activity (or lack of) daily as patient will have reduced gut motility
  - Intake:
    - Record all offered food & fluids as well as all consumed intake including fluids.
    - Check all meals against the meal plan, patient should not be allowed to choose meal from the meal plan at this stage: see nutritional management plan/page1)
- Request family members to assist with the management plan, by NOT bringing in food and medications (laxatives) from home or allowing patient to exercise.
- Monitor and contain eating disorder behaviours
  - Visual observations minimum frequency 15 minute intervals
  - It is often more effective particularly on medical wards to provide 1:1 constant supervision.
  - Shared room (rather than single room)
  - Exercise
    - Limit physical activity (may require bed rest with supervised bathroom privileges to reduce energy expenditure)
  - Vomiting /chewing spitting
    - Support at meals and post meals
    - All toilet needs must be attended prior to meals
    - When risk is high supervise in toilet and shower
  - Laxatives/diuretics
    - Senna based laxatives and stimulants should not be prescribed
    - Manage constipation as clinically indicated, eg with stool softeners
    - No laxatives from home, and supervise toilet use

– Inappropriate fluid intake

Monitor fluid intake for under or over drinking

– Restriction

If possible provide supervision during and after meals to observe and record intake contain inappropriate behaviours and address any non-compliance with meal plan

**Enquires regarding this document  
should be directed to EDOS on (07) 31007500**

**Ideal Body Weight (IBW) Ready Reckoner for Adolescents: *Girls 7-18yo***

<b>Age</b>	<b>BMI at 100% IBW (100%<i>m</i>BMI)</b>	<b>BMI @ 75% IBW (75%<i>m</i>BMI)</b>	<b>BMI @ 85% IBW (85%<i>m</i>BMI)</b>
7	15.4	11.6	13.1
7.5	15.6	11.7	13.3
8	15.8	11.9	13.4
8.8	16	12.0	13.6
9	16.3	12.2	13.9
9.5	16.6	12.5	14.1
10	16.8	12.6	14.3
10.5	17.2	12.9	14.6
11	17.4	13.1	14.8
11.5	17.8	13.4	15.1
12	18	13.5	15.3
12.5	18.4	13.8	15.6
13	18.7	14.0	15.9
13.5	19	14.3	16.2
14	19.4	14.6	16.5
14.5	19.6	14.7	16.7
15	19.9	14.9	16.9
15.5	20.2	15.2	17.2
16	20.4	15.3	17.3
16.5	20.6	15.5	17.5
17	20.9	15.7	17.8
17.5	21.1	15.8	17.9

**Ideal Body Weight (IBW) Ready Reckoner for Adolescents: *Boys 7-18yo***

<b>Age</b>	<b>BMI at 100% IBW (100%<i>m</i>BMI)</b>	<b>BMI @ 75% IBW (75%<i>m</i>BMI)</b>	<b>BMI @ 85% IBW (85%<i>m</i>BMI)</b>
7	15.5	11.6	13.2
7.5	15.6	11.7	13.3
8	15.8	11.9	13.4
8.8	16	12.0	13.6
9	16.2	12.2	13.8
9.5	16.4	12.3	13.9
10	16.6	12.5	14.1
10.5	16.9	12.7	14.4
11	17.2	12.9	14.6
11.5	17.5	13.1	14.9
12	17.8	13.4	15.1
12.5	18.1	13.6	15.4
13	18.4	13.8	15.6
13.5	18.8	14.1	16.0
14	19.2	14.4	16.3
14.5	19.5	14.6	16.6
15	19.8	14.9	16.8
15.5	20.2	15.2	17.2
16	20.6	15.5	17.5
16.5	20.9	15.7	17.8
17	21.2	15.9	18.0
17.5	21.6	16.2	18.4

Adapted from a table compiled by the Victorian Centre of Excellence in Eating Disorders (CEED) 2013.

# A Guide to Using the Qld Mental Health Act 2000 (MHA) for Patients with an Eating Disorder

Eating Disorders are mental illnesses that can be life-threatening, and associated with impaired capacity due to the mental illness itself as well as the effects of starvation on the brain. It is appropriate to use the MHA in situations in which the patient's impaired capacity is putting them at risk. Please find below a list of the criteria for involuntary treatment under s14 of the MHA, along with notes to assist in deciding whether the criteria apply to a patient with an eating disorder:

## The treatment criteria for a person, are all of the following:

### 1. the person has a mental illness;

Note: Anorexia Nervosa, Bulimia Nervosa and Other Specified Feeding or Eating Disorder (Previously Eating Disorder Not Otherwise Specified) are all listed as mental illnesses in DSM-V

### 2. the person's illness requires immediate treatment;

Note: The guide to admission and inpatient treatment criteria are based on RANZCP clinical guidelines; and have been endorsed by the Statewide Mental Health Network, The Statewide General Medicine Network, and the Queensland Divisions of General Practice. These pathways recommend (immediate) inpatient treatment if any ONE of the following criteria are met in relation to a suspected or diagnosed eating disorder or malnutrition:

- Temp < 35.5°C
- BMI <14
- Systolic BP <90
- HR ≤40 or >120
- Significant postural tachycardia or BP changes
- Electrolyte abnormalities
- Non-response to community treatment

### 3. the proposed treatment is available at an authorised mental health service;

Note: The guide to admission and inpatient treatment document advises admission to a patient's local mental health or medical inpatient unit (refer to the document for relevant criteria) if inpatient treatment is required

**4. because of the person's illness:**

**(i) there is an imminent risk that the person may cause harm to himself or herself or someone else;**  
**or**

Note: Anorexia Nervosa has the highest mortality rate (20%) of any psychiatric illness. Deaths are due to malnutrition and suicide.

**(ii) the person is likely to suffer serious mental or physical deterioration**

Note: The Minnesota Semi-starvation Study conducted by physiologist Ancel Keys demonstrated that starvation causes predictable mental, behavioural and physical symptoms that only reverse with nutritional rehabilitation (See [http://en.wikipedia.org/wiki/Minnesota\\_Starvation\\_Experiment](http://en.wikipedia.org/wiki/Minnesota_Starvation_Experiment))

**5. there is no less restrictive way of ensuring the person receives appropriate treatment for the illness**

Note: The guide to admission and inpatient treatment document nominates clear criteria in which inpatient treatment is advisable

**6. the person;**

**(i) lacks the capacity to consent to be treated for the illness; or**

Note: The Minnesota Semi-starvation Study conducted by physiologist Ancel Keys (See [http://en.wikipedia.org/wiki/Minnesota\\_Starvation\\_Experiment](http://en.wikipedia.org/wiki/Minnesota_Starvation_Experiment)) demonstrated that loss of 25% of body weight led to profound cognitive changes in all subjects. Such starvation-induced changes include obsessive preoccupation with food and eating and loss of perspective and insight. These changes were only reversed when weight was restored.

**(ii) has unreasonably refused proposed treatment for the illness.**

Note: This criterion is self-evident

**Enquiries regarding the use of the MHA for hospital Patients with an Eating Disorder can be directed to EDOS on 07 3100 7500**

**NB It is suggested that General Practitioners contact their local hospital and ask to be put through to the Mental Health Acute Care Team for advice and assistance with using Mental Health Act.**

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