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A GUIDE TO THE MEDICAL RISK ASSESSMENT FOR EATING DISORDERS

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Designed for use with patients with eating disorders:

outpatients in primary and secondary care, medical inpatients, general psychiatric inpatients and eating disorder inpatients.

People with eating disorders, in particular those with anorexia nervosa, are at high risk in terms of their own health and safety. They have the highest mortality of any psychiatric illness. Both their physical state and suicidal behaviors contribute to this risk. Risk to others is less of a concern.

The factors involved in the assessment of risk in people with eating disorders include:

- medical risk
- psychological risk
- psychosocial risk
- insight/capacity and motivation.

A proxy measure for insight/motivation is the response to treatment. If medical risk is high and there is no response to treatment, it is necessary to measure capacity and consider the use of mental health law.

This Guide aims to help in the understanding of :

1. **the medical risk** - how to assess it, evaluate it and where to refer.
2. **the use of the Mental Health Act** in treatment. If medical risk is high and there is no response to treatment, it is necessary to measure capacity and consider the use of mental health law.

MEDICAL RISK

The medical risk arises from a combination of the restrictive behaviours (food and in some cases fluid) and the compensatory behaviours.

Features in history that indicate medical risk are:

- excess exercise with low weight
- blood in vomit
- inadequate fluid intake in combination with poor eating
- rapid weight loss
- factors which disrupt ritualised eating habits (journey/ holiday/exam).

Body mass index (weight/height²) is a proxy measure of medical risk in anorexia nervosa (see *Maudsley Body-Mass Index Table*). Metabolic changes are most significant if weight control measures such as vomiting and laxative abuse are used. However they are inadequate as lone markers due to the limitations of BMI, listed below. Therefore we recommend that for a rapid risk assessment, BMI should be combined with an examination of muscle strength, blood pressure, pulse rate, peripheral circulation and core temperature.

Limitations of BMI:

- potential for deceit
- less reliable if rapid change in weight
- less reliable at extremes of height
- higher risk for each BMI range for men (taller)
- children lower BMI*
- less reliable if bulimic features
- less reliable if fluid restriction
- less reliable if physical comorbidity
- BMI not critical with regards to risks associated with fluid and electrolyte balance.

* In children & adolescents the cut off for BMI to make the diagnosis is a weight and height below the second centile of BMI. It is possible to get centile charts off the web for the USA (the third centile is depicted). www.cdc.gov/growthcharts/

Brief essential medical examination

We recommend the following for a rapid risk assessment repeated frequently as necessary:

- BMI
- blood pressure and pulse rate
- muscle strength
- examination of the skin and temperature for those at high risk
- a full physical looking for e.g. infection (note can be with normal temperature) and signs of nutritional deficiency.

Tests for Muscle Strength (see table below for scoring)

1. The stand up/squat test

The patient is asked to squat down on her haunches and is asked to stand up without using her arms as levers if at all possible.

2. The sit up test

The patient lies flat on a firm surface such as the floor and has to sit up without, if possible using her hands.

Tests for Hydration

The sign to notice is dizziness or faintness standing up from sitting.

Postural drop, ie the difference between lying and standing blood pressure and heart rate.

Investigations

1. Frequent investigations of full blood count and chemistry are necessary: (FBC, ESR, UE, Cr, CK, Gluc, LFTs if:

- patients are in a high risk category from a previous assessment
- they have a BMI <15 or
- the BMI is less reliable due to features outlined above or
- there is a history of purging

2. ECG is recommended if BMI < 14kg/m² and if drugs which have an effect on QT interval are prescribed.

3. Any other appropriate physical investigation pertinent to physical state.

The following table gives values of concern for each part of the assessment and is followed by a management protocol based on risk.

SYSTEM	Test or Investigation	Concern	Alert
Nutrition	BMI.....	<14.....	<12
	Weight loss/week.....	>0.5kg.....	>1.0kg
	Skin Breakdown.....	<0.1cm.....	>0.2cm
	Purpuric rash.....		++
Circulation	Systolic BP.....	<90.....	<80
	Diastolic BP.....	<70.....	<60
	Postural drop (sit-stand).....	>10.....	>20
	Pulse Rate.....	<50.....	<40
Musculo-skeletal (squat and sit-up tests)	Unable to get up without using arms for balance (yellow).....		++
	Unable to get up without using arms as leverage (red).....		++
	Unable to sit up without using arms as leverage.....		++
	Unable to sit up at all.....		++
	Temperature		<35C
		<98.0F	<97.0F
Bone Marrow	WCC.....	<4.0.....	<2.0
	Neutrophil count.....	<1.5.....	<1.0
	Hb.....	<11.....	<9.0
	Acute Hb drop.....		++
	(MCV and MCH raised - no acute risk)		
	Platelets.....	<130.....	<110
Salt/water Balance	K+.....	<3.5.....	<3.0
	2. Na+.....	<135.....	<130
	3. Mg++.....	0.5-0.7.....	<0.5
	4. PO4--.....	0.5-0.8.....	<0.5
	5. Urea.....	>7.....	>10
	Liver	Bilirubin.....	>20.....
Alkpase.....		>110.....	>200
AsT.....		>40.....	>80
ALT.....		>45.....	>90
GGT.....		>45.....	>90
Nutrition	Albumin.....	<35.....	<32
	Creatinine Kinase.....	>170.....	>250
	Glucose.....	<3.5.....	<2.5
Differential Diagnosis	TFT, ESR		
ECG	Pulse rate.....	<50.....	<40
	Corrected QT interval (QTC).....		>450msec
	Arrythmias.....		++

- The baselines for these tests vary between labs. Any abnormal result is an indication for concern and monitoring.
- A tachycardia in the presence of signs and investigations of severe risk may be a harbinger of imminent cardiovascular collapse.

1. No table scores.

Stable. Regular review and monitoring of above parameters with routine referral to eating disorders unit/secondary services depending on local resources.

Unstable. If weight is falling ask the person with anorexia nervosa to come up with plan to ensure that nutritional state does not fall into the risk areas. Regularly review the implementation of this plan.

2. Score/s in the Concern area.

Regular review of parameters (c.weekly) and assessment of capacity with urgent referral to eating disorders and appropriate medical intervention if needed. As this signifies medical risk this should also be shared with the carer.

3. Score/s in the Alert area

Immediate contact and referral to eating disorders unit and physicians if outpatient with assessment of capacity. The patient will need urgent specialist and medical assessment. If inpatient – immediate contact with on-call physicians.

Useful tips

Potassium

This is often chronically low in purging, even down to values <1.5 mmol/L, with no immediate sequelae. Acute changes are more dangerous. Regular feeding with control of purging is usually sufficient for re-establishment of normal levels. If potassium replacement is required, because it is usually caused by a loss of gastric secretion, it should be done with oral replacement with a salt and water replacement such as diorylate with regular electrolyte review and examination of fluid and water status (measurement of urea and lying and standing blood pressure).

Refractory hypokalaemia is usually due to concurrent low magnesium or calcium, and thus these levels may need checking and rectifying. Serum potassium levels may remain low even with potassium supplements if vomiting persists. A proton pump inhibitor such as lansoprazole to inhibit gastric acid secretion may reduce metabolic alkalosis and help to conserve potassium but should be a second line measure.

Phosphate

Rebound hypophosphataemia can occur on initial refeeding as it is sequestered by carbohydrate, metabolism. It can be lethal if very low. Initial refeeding must include foods with high phosphorus content – eg milk based products (>2 pints/day). If necessary about 4 days of oral phosphate supplementation is needed.**

** In anorexia nervosa it is rare for there to be an isolated deficiency of any mineral or vitamin and therefore multivitamin and mineral replacement is to be recommended eg Forceval 2 capsules day or Sanatogen Gold

Refeeding oedema

Peripheral oedema is common and harmless during initial refeeding. It resolves within a few weeks spontaneously and rarely needs treatment. It must however be distinguished from oedema secondary to heart failure.

Dehydration

This can rapidly lead to medical crisis through circulatory and renal failure. All patients should be fully assessed for dehydration. Take a corroborative history of fluid intake and signs of decompensation (dizziness/ fainting). The physical examination should include assessment of skin turgidity, ocular pressure and lying and standing blood pressure. Regular electrolyte levels should be checked for high urea, creatinine, sodium and potassium levels Oral replacement is preferable eg using Diorylate

Bradycardia

Investigation: ECG looks for heart block or prolonged QT. Measure U & E. If <40 admit. Rewarm (if hypothermic) and give a can of Ensure. Monitor HR overnight,

THE USE OF THE MENTAL HEALTH ACT IN TREATMENT OF ANOREXIA NERVOSA

Capacity and Medical Intervention

If a patient is at medical risk but does not consent to treatment they must be:

1. assessed for capacity and
2. treated under the appropriate legal criteria.

Capacity is related to a patient's ability to:

- retain and understand information;
- be able to understand the nature of their illness and understand the implications of non-treatment;
- be able to rationally weigh up the pros and cons of treatment;
- thus make an informed rational decision regarding their management.

Patients with anorexia nervosa can fail on all areas of capacity.

Refeeding against a patient's will

If a patient needs refeeding to save their life this can be done against their will ONLY as a psychiatric treatment under the Mental Health Act, if their capacity is impaired. In severe anorexia nervosa there is often there is a focal deficit in capacity related to food although the capacity in other areas might be normal. This applies to oral and all parenteral treatments.

Medical treatment against a patient's will

Urgent medical treatment to save a patient's life is treated as any other patient i.e with impaired capacity the doctor can treat in the patients best interest under common law. Non urgent treatment of medical complications can only done with the patient's consent even if capacity is impaired.