THE MEDICAL EXAMINATION

The medical assessment will include the following:

1. detailed medical history
2. weight history
3. menstrual history
4. current and past medications
5. a physical examination includes:
   - height, weight and BMI or BMI centile charts (children and adolescents)
   - blood pressure and pulse
   - core temperature
   - examination of peripheries (circulation and oedema)
   - assessment for hydration
   - cardiovascular examination including postural hypotension
   - oral examination
   - hair loss, lanugo, skin dryness, skin colour, sores
6. investigations include:
   - full blood count, ESR, urea, electrolytes (including phosphate and magnesium if at risk of refeeding syndrome), creatinine, liver
   - function tests, renal function tests, glucose, thyroid function tests,
   - hormone levels, iron studies, vitamin B12 and folate
   - urinalysis
   - ECG in cardiac compromise, bradycardia, electrolyte abnormality or low BMI
   - A bone scan (identification of osteoporosis or osteopenia)


What to look for

People with eating disorders can present in a wide variety of clinical states ranging from ostensibly perfect health to near collapse, sometimes with worrying medical complications concealed by bright vivacity or hostile denial. Clients may be reluctant or refuse to answer any questions, participate in a physical examination or be weighed. Where emaciation is marked and there are concerns for the physical safety of the person, these are not negotiable aspects of the assessment. However, even where this is the case it will be important to use a matter-of-fact, non-threatening, non-judgemental approach in your explanation of this to the client.

In emaciation blood pressure is likely to be reduced below 100/60mmHg with bradycardia below 60 beats per minute. A systolic blood pressure of 60mmHg or below and a pulse rate less than 50 beats
per minute are indications for hospitalisation although most clients are less ill than this on presentation. A fall in blood pressure of 10-20 beats or a rise of 10-20 beats per minute on standing indicates cardiac compromise. Usually there is some degree of sinus arrhythmia but other arrhythmias, t-wave changes, prolongation of the ST interval and conduction disturbances may be seen on ECG. An ECG suggestive of acute anterior myocardial infarction can occur in severe hypothermia, along with a rise in cardiac troponin and CPK (creatine phosphokinase).

Body temperature is most likely to be low and extremities cool to touch. In a client with severe emaciation, a normal or elevated temperature reading should be of concern as it is likely to indicate some form of infection.

Skin will look generally dry and fine downy hair (lanugo hair) may be apparent on face back and chest.

Weighing and measuring the client are of course essential but might not be accepted until some therapeutic alliance is established. An estimation of BMI or an idea of weight and height percentiles might need to be made based on information from the client or parents. In any case these parameters are less important than the client’s metabolic and cardiovascular status.

What to ask about/observe for/investigate

It is important to address the following lines of inquiry to elucidate the main areas of medical compromise in people who have eating disorders - particularly cardiovascular, haematological, immunological, gastrointestinal, reproductive and renal disturbance.

Have there been any associated signs of ill health? Including:
- light headedness, weakness, tiredness
- reduced exercise tolerance
- motor restlessness
- disturbed sleep
- skin changes i.e. fine hairiness
- loss of head hair
- pigmentation or pallor
- easy bruising or unusual infections

Cardiac Symptoms
- heart palpitations
- fainting or collapse
- chest pain or swollen ankles
- numbness or coldness in hands or feet

Signs of Vomiting
- swollen parotid glands
- recurrent sore throats
- bouts of tonsillitis
- dental problems
- halitosis
• abrasions on the fingers from hitting teeth while inducing vomiting (usually the dorsum of the
dominant hand ‘Russells Sign’)  
• bloodshot eyes and/or broken capillaries in cheeks and eyelids

Gastrointestinal & Renal Symptoms

• gastric distension
• epigastric pain
• reflux
• haematemesis
• abdominal pain
• diarrhoea (sometimes an indicator of laxative abuse)
• constipation or food intolerance (self diagnosed)

Renal disturbance in the form of nephrogenic diabetes insipidus occurs in up to 40% of clients with
significant emaciation and the deliberate fluid restriction of some younger clients. Is the client passing
more or less urine than usual or getting up at night to do so – has this changed? Has he or she been
less or more thirsty, or been intentionally increasing or decreasing fluid intake?

Menstruation

It is important to get a detailed menstrual history as this can also provide some indication of duration of
disordered eating behaviour. Inquiry should be made as to when menarche occurred and as to the
previous menstrual pattern – including age of onset of menarche if this has occurred as well as whether
and when menstruation ceased.

Additional issues associated with menstruation/amenorrhoea include:

• >22% body fat is required for regular menstruation to occur. A drop of 10-15% weight from an ideal
body weight will result in a drop below 22% body fat and is likely to affect menstrual function.
However, ovulation and pregnancy can still occur without menstruation & clients should be advised
of this.
• Amenorrhoea in AN occurs due to hypothalamic mediated hypogonadotrophic hypogonadism
(suppressed secretion of FSH and LH with secondary low ovarian oestrogen).
• Although primarily considered a manifestation of low weight or malnutrition, it can occur following a
prolonged period of weight loss or erratic eating behaviour, even while still at a 'normal' weight, and
also as a response to prolonged intensive exercise as occurs in the Female Athlete Triad (a
syndrome of disordered eating, amenorrhoea and osteoporosis)
• Amenorrhoea and oligomenorrhoea can also occur in up to 30% of patients with BN (including
patients of a normal weight), but is not a diagnostic criterion.
• Persistence of amenorrhoea > 6 months is associated with lowered bone mineral density.
• Menses usually return upon achieving satisfactory weight gain, although regular menses may be
delayed for up to 12 months. There is individual variation in the weight required for resolution of
hypogonadism and resumption of menses.
• A weight gain to at least 90% of Ideal Body Weight (IBW- the 50th centile for height and age) is
associated with resumption of menses in about 90 percent of patients within 6 months. Some
patients will achieve normal gonadal function at lower weight. Patients who engage in intensive
exercise and/or ongoing disordered eating behaviour may need to maintain a higher weight for
menstrual recovery.
Menstruation may not return at any time if severe stress or other factors that can cause amenorrhoea occur.

Patients may be monitored by measuring FSH, LH and oestradiol and/or pelvic ultrasound for objective evidence of recovery.

In premenarchal children, progression of pubertal breast and genital development as well as normal growth indicate functional recovery. The presence of pubic or axillary hair alone may reflect adrenal function and is not a reliable indicator of gonadal function.

Polycystic ovary syndrome is a common cause of irregular or absent menses in adolescents and young women and can co-occur with an eating disorder. In amenorrhoea secondary to polycystic ovary syndrome alone, oestradiol and FSH is usually normal and LH may be normal or elevated with an LH:FSH ratio > 2:1. Note that Ultrasound features of polycystic ovaries is often absent, especially in young patients and is not required for the diagnosis.

Note that prescription of an Oral Contraception Pill (other than for contraception) to mimic ‘normal’ menstruation is NOT indicated.

Primary Amenorrhoea

The absence of menses by age 14 plus the absence of secondary sex characteristics; or, the absence of menses by age 16 in the presence of normal pubertal development.

Secondary Amenorrhoea

The absence of menses upon a history of menstruating normally, hypothalamic in origin and due in part to suppression of the hypothalamic-pituitary-gonadal axis. Other factors include stress and the additive effects of malnutrition, weight loss, starvation, and strenuous exercise. Females who have not menstruated for 3 months should be evaluated to determine the

Investigation of osteoporosis and osteopaenia should be considered for all patients who have been amenorrhoeic for 6 months or more if available and annually thereafter or unless otherwise clinically indicated. Dual-Energy X-ray Absorptiometry (DEXA) scanning services for adults are widely available. However, many services do not have the required software with age specific normal ranges to allow for meaningful interpretation in children and adolescents.

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1 Birmingham & Beumont (2004) ibid p108
2 MH-Kids (2007) ibid p50