MEED and severe eating disorders

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Risk assessment and treatment

- From Mehler et al 2018

Measure	AN (ANb) % abnormal	Other info
Prealbumin	51.4%	
Low WBC	36.1%	
Osteoporosis	34.3% (21.1%)	
Low Vit D	30%	
Low Na	16%	
Low K	14.2% (42.4%)	BN: 26.2%
Low glucose	7.1%	
Low phosphate	6%	

1. https://pubmed.ncbi.nlm.nih.gov/29417593/

How risky are eating disorders?

- The standardized mortality ratios were 5.86 for AN, 1.93 for BN, and 1.92 for EDNOS. One in 5 individuals with AN who died had committed suicide.[2]

- Anorexia has the highest (standardized) mortality rate of any psychiatric disorder [3]

- For comparison, the SMR for Type 1 Diabetes is 3.46 and for Crohn's Disease it's 1.14

2. https://pubmed.ncbi.nlm.nih.gov/21727255/.
3. https://www.beateatingdisorders.org.uk/media-centre/eating-disorder-statistics/

Some cases with a catastrophic outcome

Case 1: sent home rapidly with no follow up

18 year old with AN for 3 years.
Admitted to medical ward with hypokalaemia. K corrected.
Discharged after 20 hours.
Found dead in bed 14 days later.

Lesson: Check K regularly after discharge and ensure treatment referral.

Case 2: Untreated hypoglycaemia

Admitted to medical ward, BMI 10.8. Glucose<4 mmol/L. Not fed for four days while liver function investigated. Transferred to another medical ward. Severe hypoglycaemia (glucose <2 mmol/L). Left untreated and died in hypoglycaemic coma.

Lessons: Feed the patient immediately. Liver enzymes often raised in severe AN. Treat hypoglycaemia as an emergency.

Case 3: “Underfeeding syndrome”

21 year old (left) with 6 years AN. Referred to A and E with chest pain. No cause found but admitted because of mild liver abnormalities. Not fed during admission. Perhaps fear of inducing refeeding syndrome. Died after 7 days on about zero calories.

Lesson: 1. get patient back to a SEDU unless medical bed is essential. 2. Avoid refeeding syndrome by starting refeeding slowly but increasing feed rate within 12 hours if no RFS appears, rechecking every 12 hours

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Averil Hart: 'Neglect and systemic failures caused anorexia death'

6 November 2020

The coroner said systemic failures had been identified in Averil Hart's care

1. Mental health trust investigation
2. Acute trust investigation
3. University investigation
4. Ombudsman report
5. Coroner's report and more

Parliamentary and Health Service Ombudsman

Ignoring the alarms: How NHS eating disorder services are failing patients

MARSIPAN

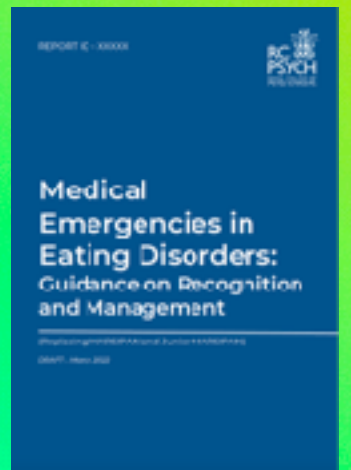
- Developed following the description of a similar case at the BAPEN 2008 meeting.
- A group of physicians and psychiatrists co-wrote the first edition of MARSIPAN, published in 2010
- A young person's version came out in 2012
- A second adult edition appeared in 2014
- The third edition MEED was launched on 19 May 2022, and will form the basis for today's talk

The current situation

- Fatal cases continue to be reported from medical units well after publication of MARSIPAN.
- So in 2020 a group was set up with:
  - Physicians
  - Psychiatrists
  - Dietitians
  - Nurses
  - Psychologists
  - Patients (Experts by experience)
  - Parents
  - Etc
- MEED is available by searching for “MEED anorexia”

MARSIPAN and MEED

- More awareness of eating disorders among clinicians
- This especially is seen in psychiatrists and paediatricians
- But support from some physicians in gastroenterology and Emergency Medicine have been great
- We are hopeful that the new guidance will be taken up universally



MEED: The focus

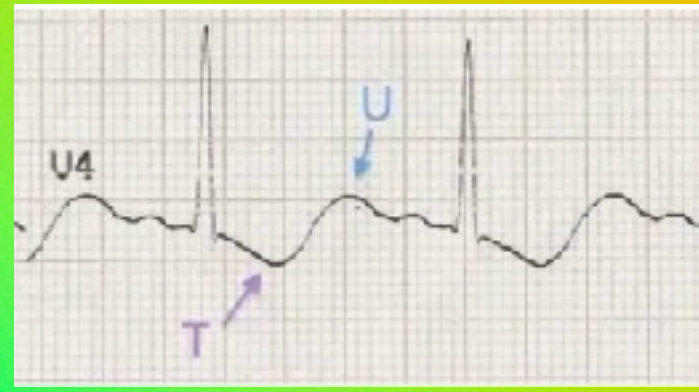
- The main focus is on reducing avoidable deaths mainly in medical units, but also in psychiatric units and the community
- It is all age
- It deals with all eating disorders, not only Anorexia Nervosa

Some apparent causes of death in a series reported to our group

- Failure to use the Mental Health Act (or equivalent)
- Failure to treat extreme hypoglycaemia
- Failure to recognize and treat refeeding syndrome
- Provision of no or almost no calories in an apparent attempt to avoid refeeding syndrome
- Inability of nurse to prevent exercise leading to fatal hypoglycaemia
- Inappropriately providing palliative care to a patient with AN
- Not feeding the patient while pursuing possible causes of raised LFTs

What are the main factors that increase risk in Eating Disorders?

- Low weight
- Electrolyte abnormalities
- Self-harm and depression



How to assess the risk posed by low weight

- Absolute level of BMI (or %mBMI in <18s)
- Rate of weight loss
- If the patient may be falsifying his/her weight
- Physiological changes

Absolute level of BMI and %mBMI (See MEED[4])

- **MEED RED rating is <13**

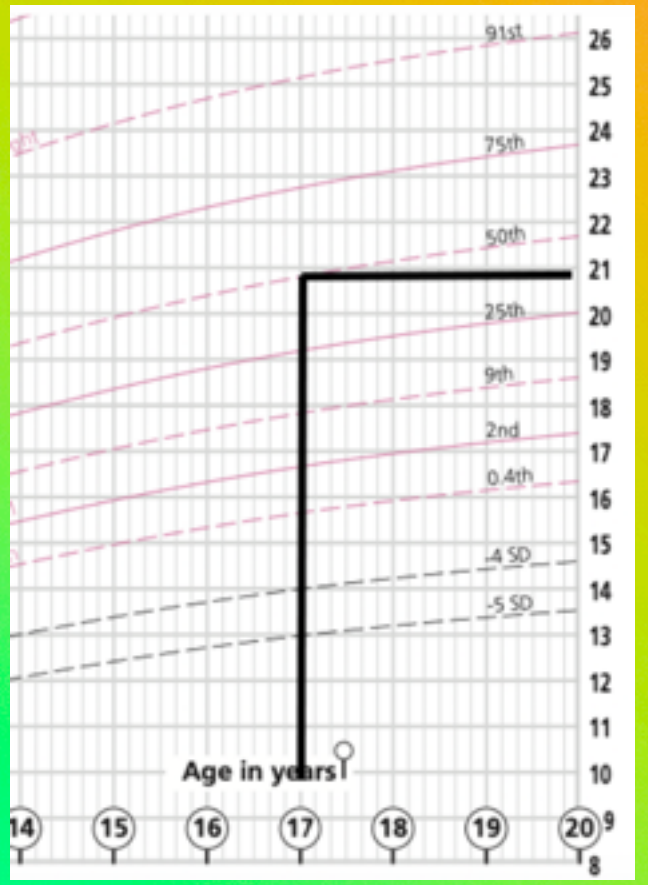
- For <18s (definitely <16s) use **%mBMI**
  - Check young person's BMI
  - Look up 50th%ile for height (from eg RCPCH[5])
  - %mBMI = (BMI x 100)/(50th %ile BMI)
  - MEED RED rating is <70%. Note: this eg in a 17 year old, gives higher BMI in the red risk category

4. MEED Medical Emergencies in Eating Disorders. https://www.rcpsych.ac.uk/improving-care/campaigning-for-better-mental-health-policy/college-reports/2022-college-reports/cr233
5. RCPCH BMI %ile charts: https://www.rcpch.ac.uk/resources/body-mass-index-bmi-chart

Where risk rating in under and over 18s differ

- A 17 year old female has a weight of 37kg and a height of 1.6m
- Her BMI is 14.5 (AMBER (13-15) on MEED)
- Check the BMI at age 17 for a female at 50%ile
- At 17 the 50th %ile BMI for a female is 21
- So the m%BMI is 69% ie RED (<70%) on MEED

- So the risk level can vary between BMI and m%BMI



Rate of weight loss

- Not all patients with low BMI are at high risk. They may have been at that level for years.
- MEED advises:

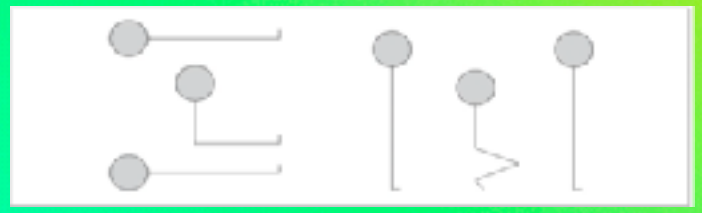
Recent loss of weight of ≥1kg/week for 2 weeks (consecutive) in an undernourished patient.
Rapid weight loss at any weight, e.g. in obesity or ARFID

Is the patient falsifying his/her weight?

- Patients with AN want to keep their weight down
- They also want help from doctors, therapists etc
- But they usually don't want to go to hospital
- So they sometimes falsify their weight before a clinic
- The ways they do this show some ingenuity:
  - Drinking water
  - Consuming salt
  - Wearing weights
  - Gripping the weighing machine with their toes
- We need to become aware of this and, apart from asking, we can use **alternative ways to monitor nutrition**…

Alternative ways to monitor nutrition

1. Spot weighing, ie unscheduled. Mainly for inpatients
2. Monitor muscle strength
   a. SUSS test[6]



   b. Hand Grip Strength

3. Monitor muscle size
   MUAC Mid-upper arm circumference[7]

4. Measure body composition[8]
   Using Bioelectrical Impedance Analysis to track body water.

- **MEED suggests using one of 1, 2 or 3.**

6. MEED Medical Emergencies in Eating Disorders.
https://www.rcpsych.ac.uk/improving-care/campaigning-for-better-mental-health-policy/college-reports/2022-college-reports/cr233
7. https://www.bfwh.nhs.uk/wp-content/uploads/2017/12/Step-1-11.2017.pdf
8. www.aminogram.com

Physiological changes

- Heart rate (awake): Adults <40
- **Systolic BP:** Adults <90
- Core temperature: <35.5
- **Dehydration:** Fluid refusal or Severe dehydration (10%)

Electrolyte abnormalities

- Hypokalaemic alkalosis (MEED RED RISK <2.5 mmol/L)
  - Caused by frequent loss of gastric acid due to vomiting
  - Vomiting → metabolic alkalosis → K loss in kidney
  - Or loss of colonic potassium due to laxative abuse
- Hyponatraemia
  - May be nutritional
  - Often related to water loading
- Hypophosphataemia
  - Unusual at onset of treatment but not unknown
  - Reaction to high carb diet after period of starvation (Refeeding syndrome)
- Hypoglycaemia
  - Occurs in starvation due to glycogen being used up
  - Associated with ketosis which protects the heart and brain.

ECG changes

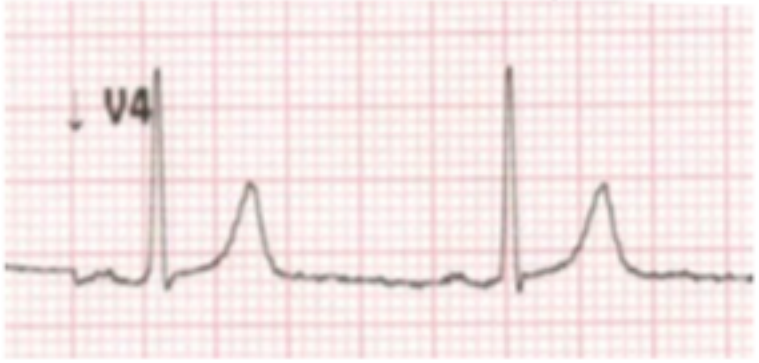
- Almost any change: inverted T, raised or depressed ST
- Bradycardia is usually an adaptation to starvation but it can go too far, so <40 is the red rating cutoff.

a. Bradycardia

37 beats per minute

b.i. Inverted T wave before refeeding

b. ii. T wave corrected 2 days after starting refeeding



Therapy

- Refeeding:
  - Beware REFEEDING SYNDROME
    - Very low weight BMI<13
    - Prolonged low intake
    - Abnormal electrolytes
    - Medical disease eg sepsis
  - Beware UNDERFEEDING SYNDROME: “RFS-phobia”
  - See MEED p70

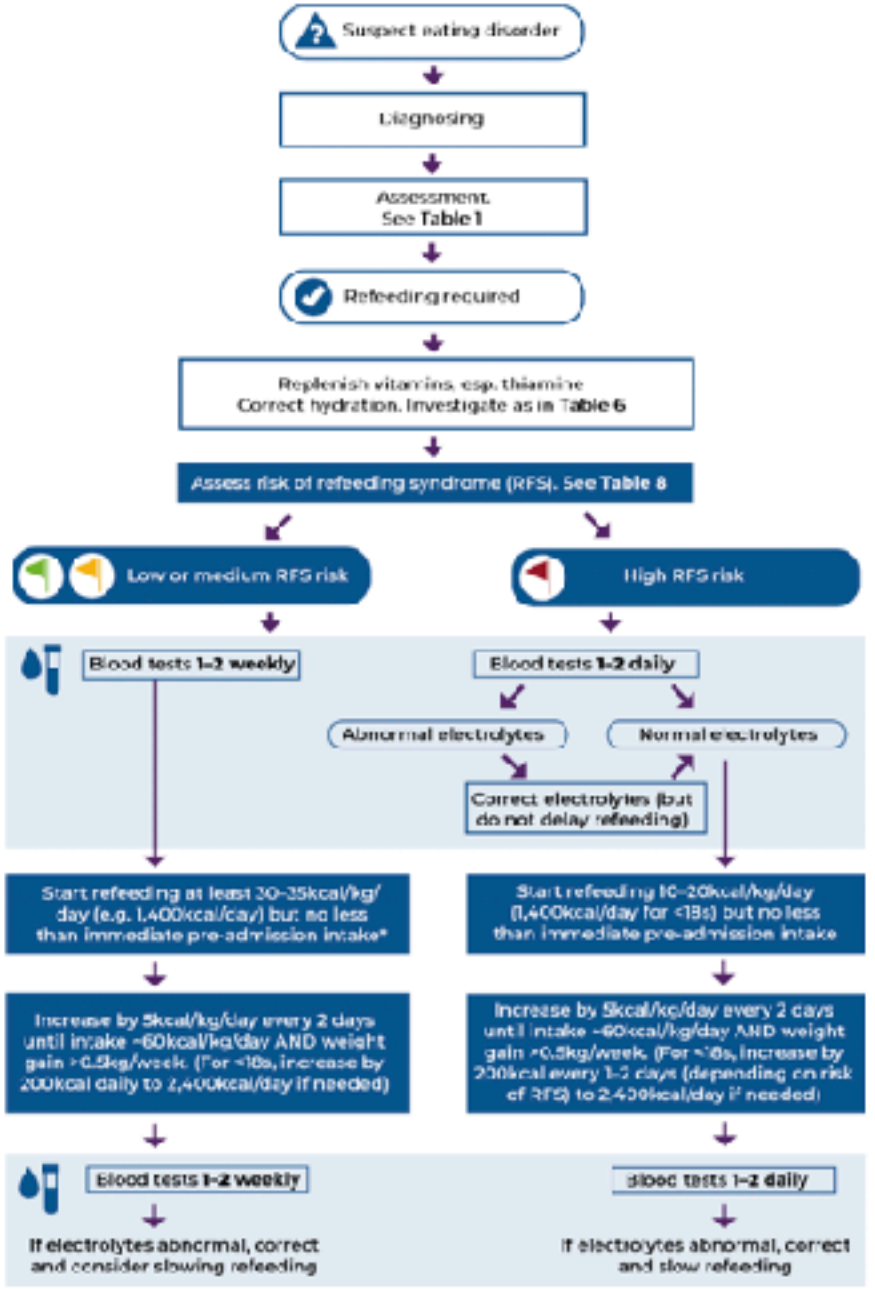


Figure 4: Refeeding decision tree

Management of behavioural symptoms on medical wards
MEED Chapter 6

Challenges to staff (eg)

- Falsifying weight
- Exercising (micro-exercising)
- Hiding/disposing of food/feed
- Taking laxatives, prescribed or brought by visitors
- Self-harm, suicidal behaviour
- Aggressive behaviour
- Absconding

Staff responses

- General: Try to treat the patient as in the grip of a compulsion, rather than "uncooperative"
- Staff training, both regular ward staff and "special" nurses
- Meetings with member of mental health team to discuss difficult behaviours
- Develop policy for managing patients with physical and mental illness

THANK YOU FOR YOUR ATTENTION

MY MAIN MESSAGE IS:

PLEESE REED MEED!

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