Under Nutrition and the Management of Eating Disorders

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March 2016

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Cardiff and Vale University Health Board

Objectives

- Human Nutrition/ reductive adaptation
- MARSIPAN
- Definitions of eating disorders
- Management of ED
- Case scenarios

Academy of Royal Colleges/ Intercollegiate Course on Human Nutrition

The Academy Nutrition Group was formed in 1997. It was set up in recognition of the importance of nutrition in medical practice for patient care and public health as a collaborative venture between the Medical Royal Colleges, and the British Dietetic Association.

Intercollegiate course is a foundation course intended to help delegates appreciate the underlying principles of nutrition that can be applied to clinical and public health problems.

The Intecollegiate Course on Human Nutrition

- Expansive adaptation
- Reductive adaptation

- Obesity
- Diabetes

- Malnutrition
- Eating Disorders

Undernutrition/Reductive Adaptation

When food intake is insufficient, the needs of the body for energy are met by mobilising tissue reserves of fat and protein from muscle, skin and the gut. Physiological and metabolic changes also take place to conserve energy.

- Reducing basal metabolism by slowing protein turnover,
- reducing the functional reserve of organs,
- slowing the sodium and potassium pumps in cell membranes and reducing their number
- Reducing inflammatory and immune responses
- Reducing physical activity and growth in children

Consequences of Reductive Adaptation affect every cell, organ and system

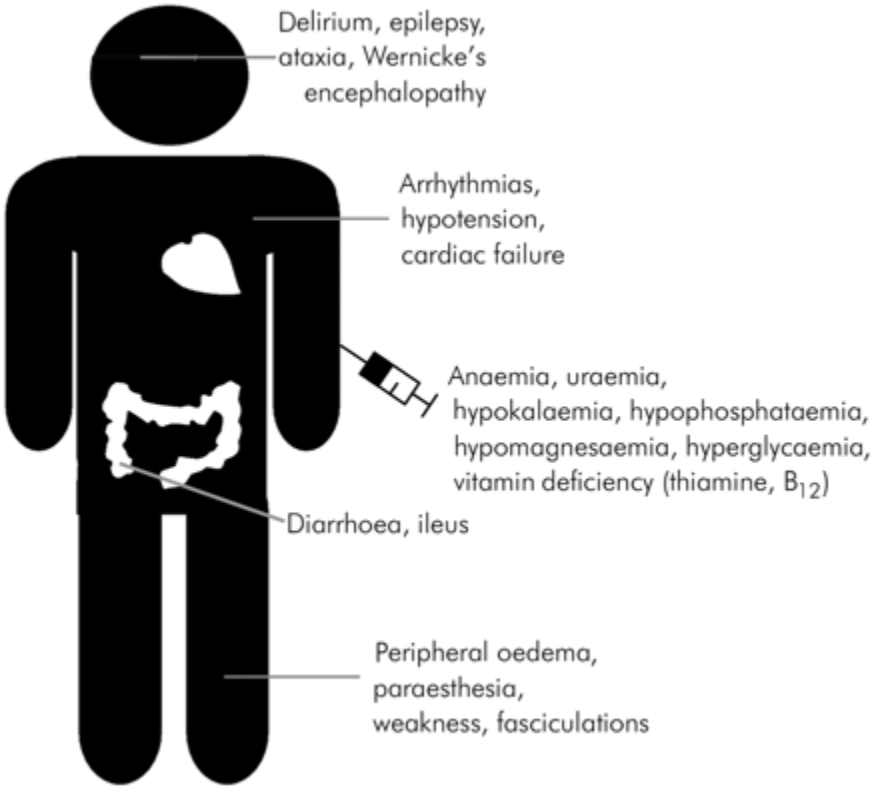
- The liver is less able to make glucose and is less able to excrete excess dietary protein and toxins
- The kidneys are less able to excrete excess fluid and sodium
- The heart is smaller and weaker and has a reduced output
- The gut produces less acid, and smaller amounts of enzymes. Villi become flattened and motility is reduced.
- Sodium leaks into cells due to fewer and slower pumps and potassium leaks out of the cells and is lost in urine
- Iron that is liberated from red blood cells is not stored safely and so promotes the growth of pathogens and harmful free radicals
- Muscle mass is reduced, so there is a loss of intracellular nutrients and glucose stores
- The immune system does not give the normal responses to infection

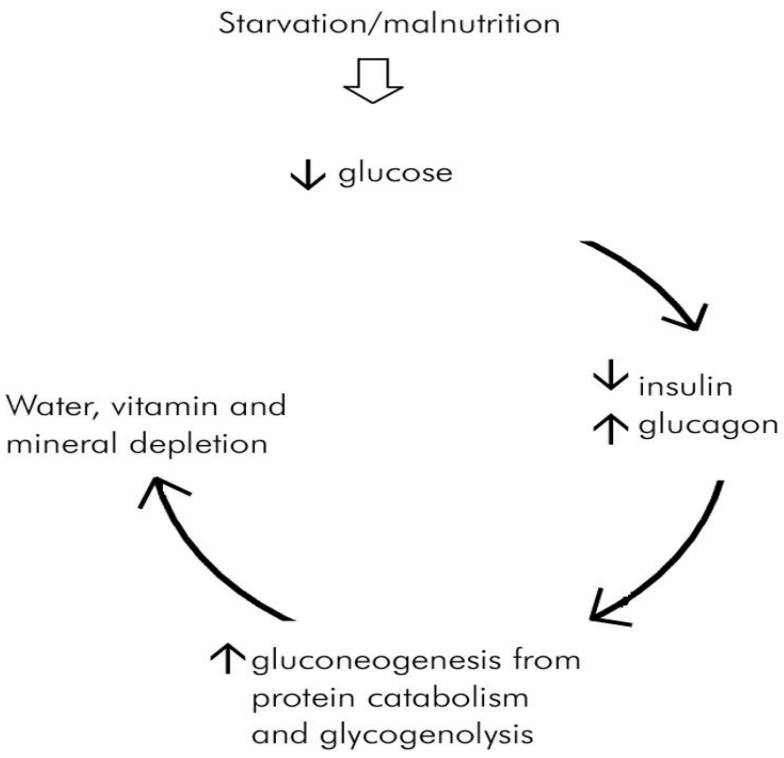
Patients with malnutrition are at acute risk of

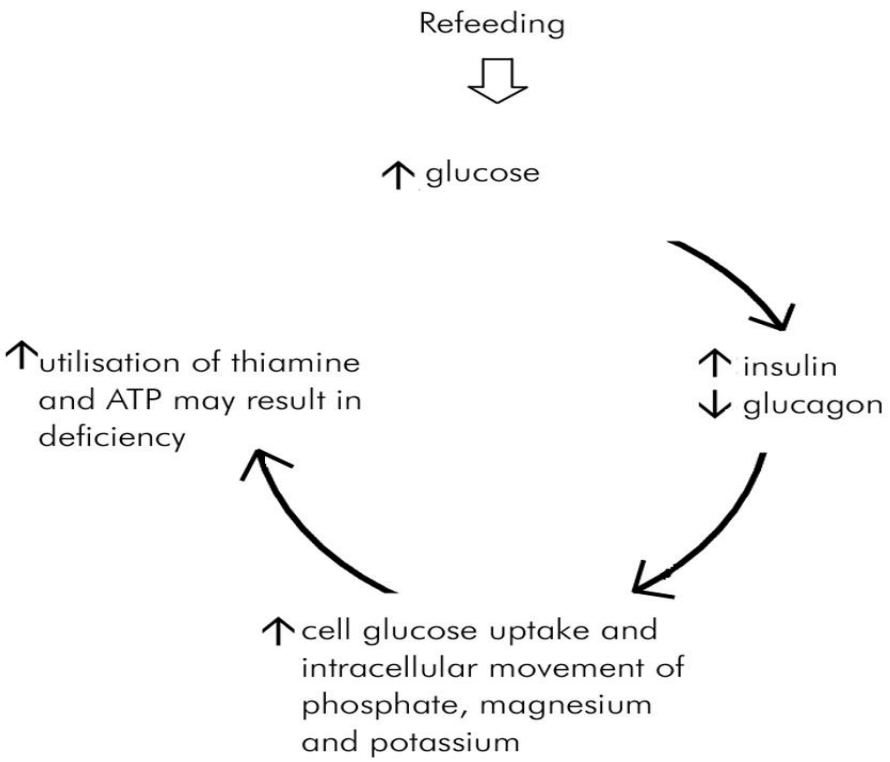
- Hypoglycaemia
- Hypothermia
- Cardiac failure
- Infection

MARSIPAN

- Guidelines from the Royal College of Psychiatrists, the Royal College of Pathologists and the Royal College of Physicians
- Management of Really Sick Patients with Anorexia Nervosa
- Junior MARSIPAN

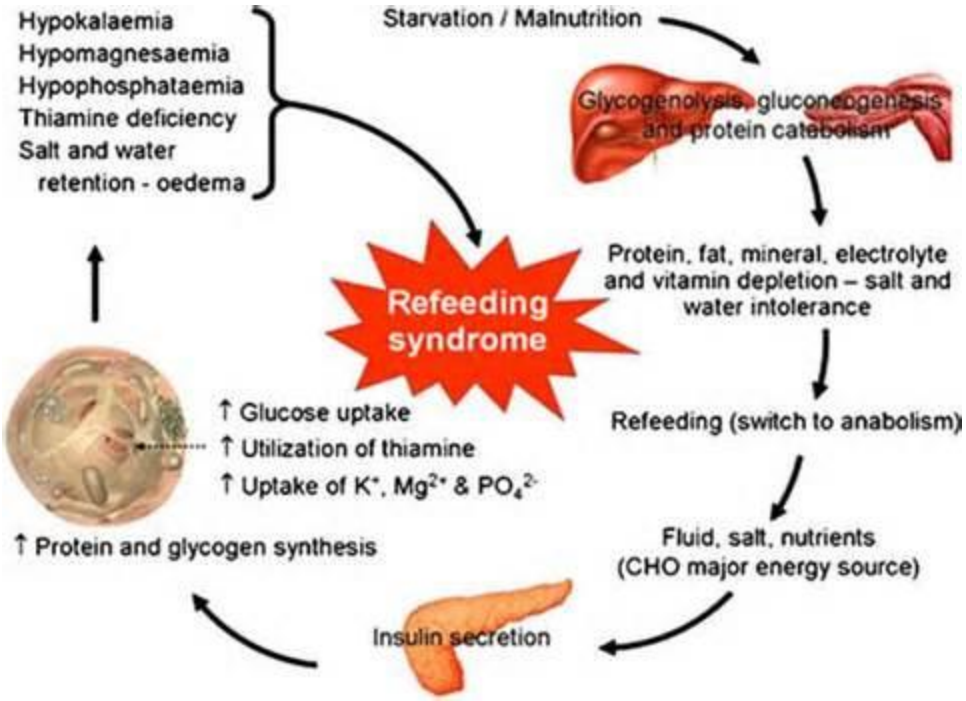

Delirium, epilepsy, ataxia, Wernicke's encephalopathy
Arrhythmias, hypotension, cardiac failure
Anaemia, uraemia, hypokalaemia, hypophosphataemia, hypomagnesaemia, hyperglycaemia, vitamin deficiency (thiamine, B_{12})
Diarrhoea, ileus
Peripheral oedema, paraesthesia, weakness, fasciculations


Starvation/malnutrition
↓ glucose
↓ insulin
↑ glucagon
↑ gluconeogenesis from protein catabolism and glycogenolysis
Water, vitamin and mineral depletion


Refeeding
↑ glucose
↑ insulin
↓ glucagon
↑ cell glucose uptake and intracellular movement of phosphate, magnesium and potassium
↑ utilisation of thiamine and ATP may result in deficiency

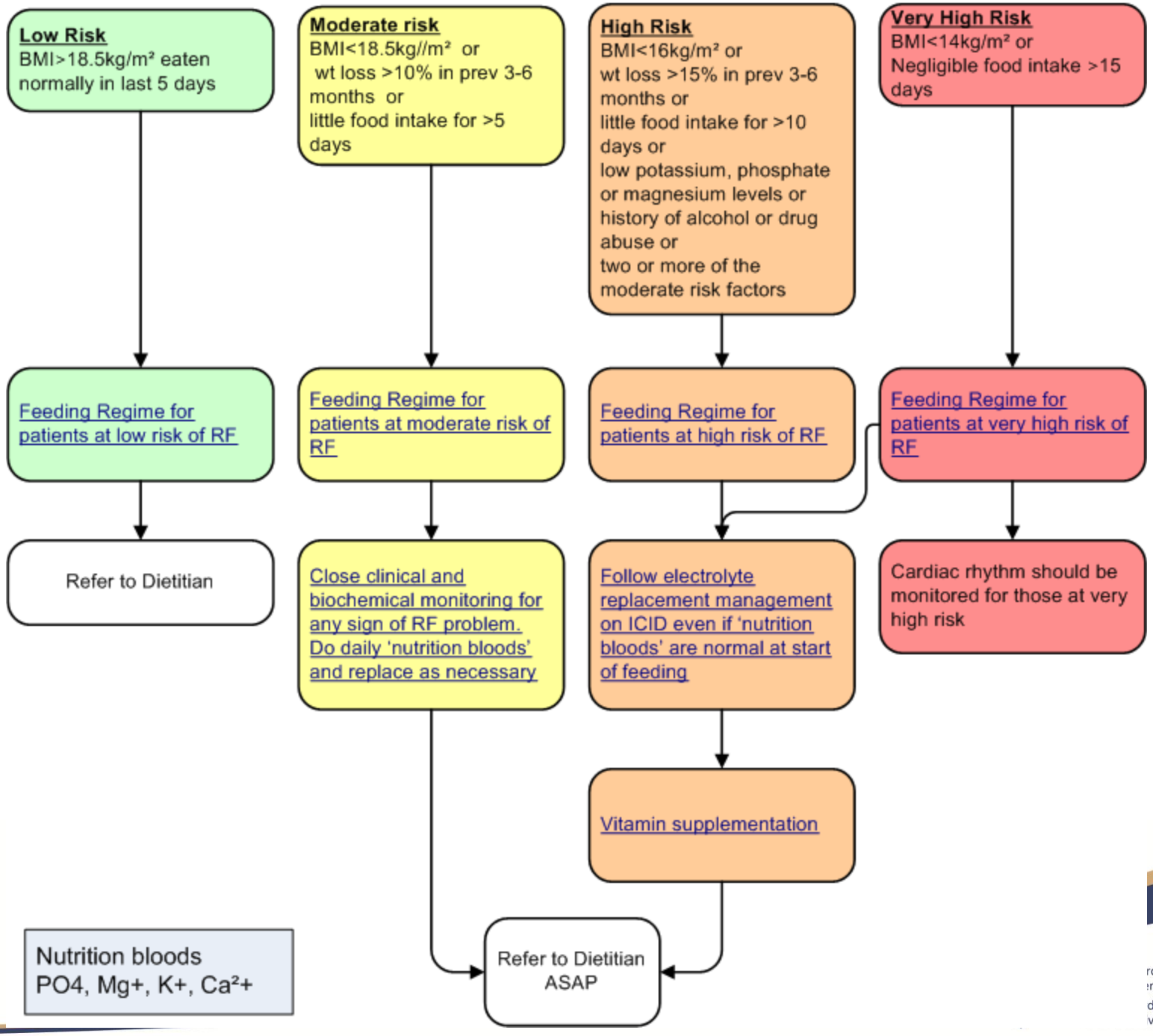
Re-feeding syndrome

- First described in war veterans
- Rapid switch from catabolic metabolism to anabolic metabolism
- Rapid shifts in nutrition bloods (phosphate, potassium, magnesium, calcium)
- Hyperinsulinaemia
- Watch out for oedema, hypoglycaemia and cardiac arrhythmias


Hypokalaemia
Hypomagnesaemia
Hypophosphataemia
Thiamine deficiency
Salt and water retention - oedema
Starvation / Malnutrition
Glycogenolysis, gluconeogenesis and protein catabolism
Protein, fat, mineral, electrolyte and vitamin depletion – salt and water intolerance
Refeeding syndrome
Refeeding (switch to anabolism)
Fluid, salt, nutrients (CHO major energy source)
Insulin secretion
↑ Protein and glycogen synthesis
↑ Glucose uptake
↑ Utilization of thiamine
↑ Uptake of K^+, Mg^{2+} & PO_4^{2-}

High risk

- New presentation with BMI below 15 (cut off for anorexia is 17.5)
- Known behaviours directed to conceal weight loss
- Doesn’t look well- important
- Feels desperate and out of control (unless a longstanding feature of presentation)
- Suicide risk
- Bloods within alert range



Management of high risk

- Preparation work is very important
- Manage acute medical risk with acute medical admission (if necessary via A&E)
- Psychiatric risk (suicide) is common and may need acute psychiatric admission
- Re-feeding is a planned process and it needs preparation work (comparison to alcohol detox)

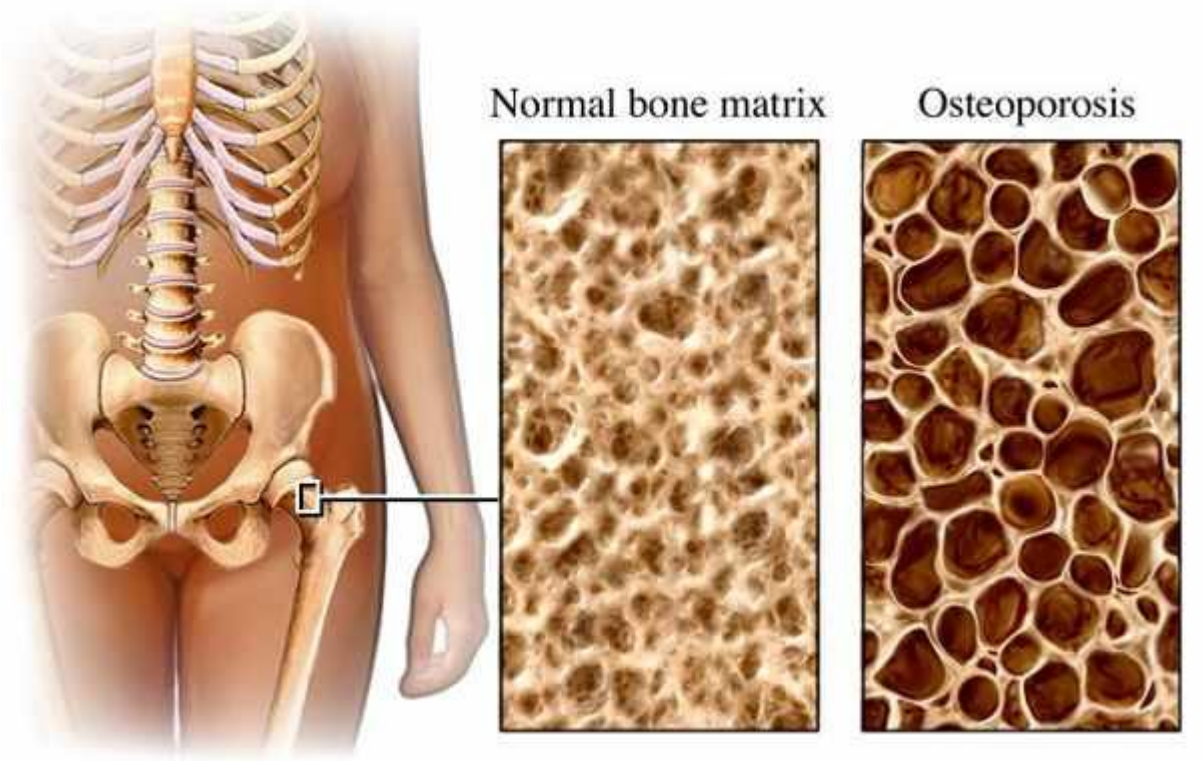
Medical care of symptoms of AN

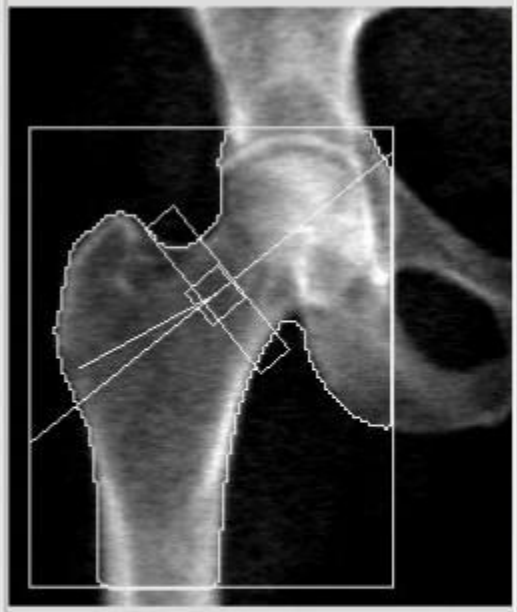
- Acute risk (re-feeding syndrome, low potassium and cardiac problems)

- Chronic risk -osteoporosis

Osteoporosis

- Loss of height
- BMI calculation
- Fractures





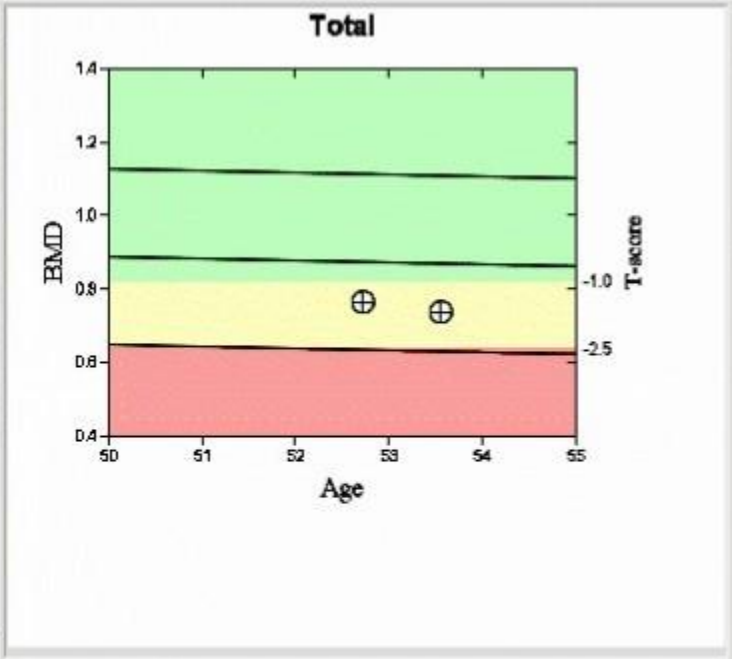
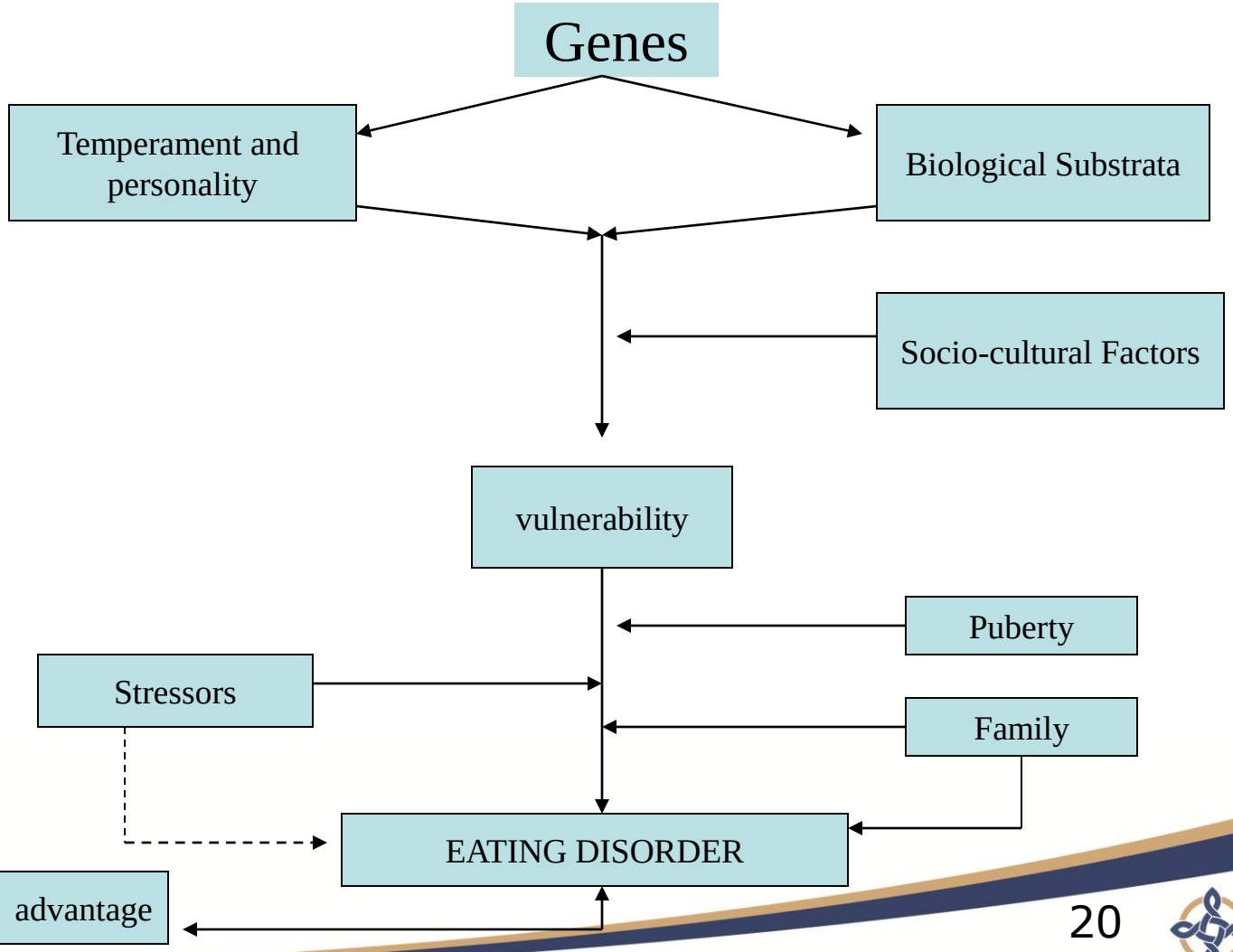


Image not for diagnostic use	
92 x 116	T-score vs. White Female; Z-score vs. White Female. Source:BMDCS/NHANES
NECK: 47 x 10	
k = 1.144, d0 = 47.9	

Management of Eating Disorders

- Anorexia: BMI below 17.5, loss of three consecutive menstrual periods, over evaluation of shape and size (restrictive or purging)
- Bulimia: BMI above 17.5, compensatory behaviours, over evaluation of shape and size
- Binge eating disorder: discrete episodes of loss of control/ overeating

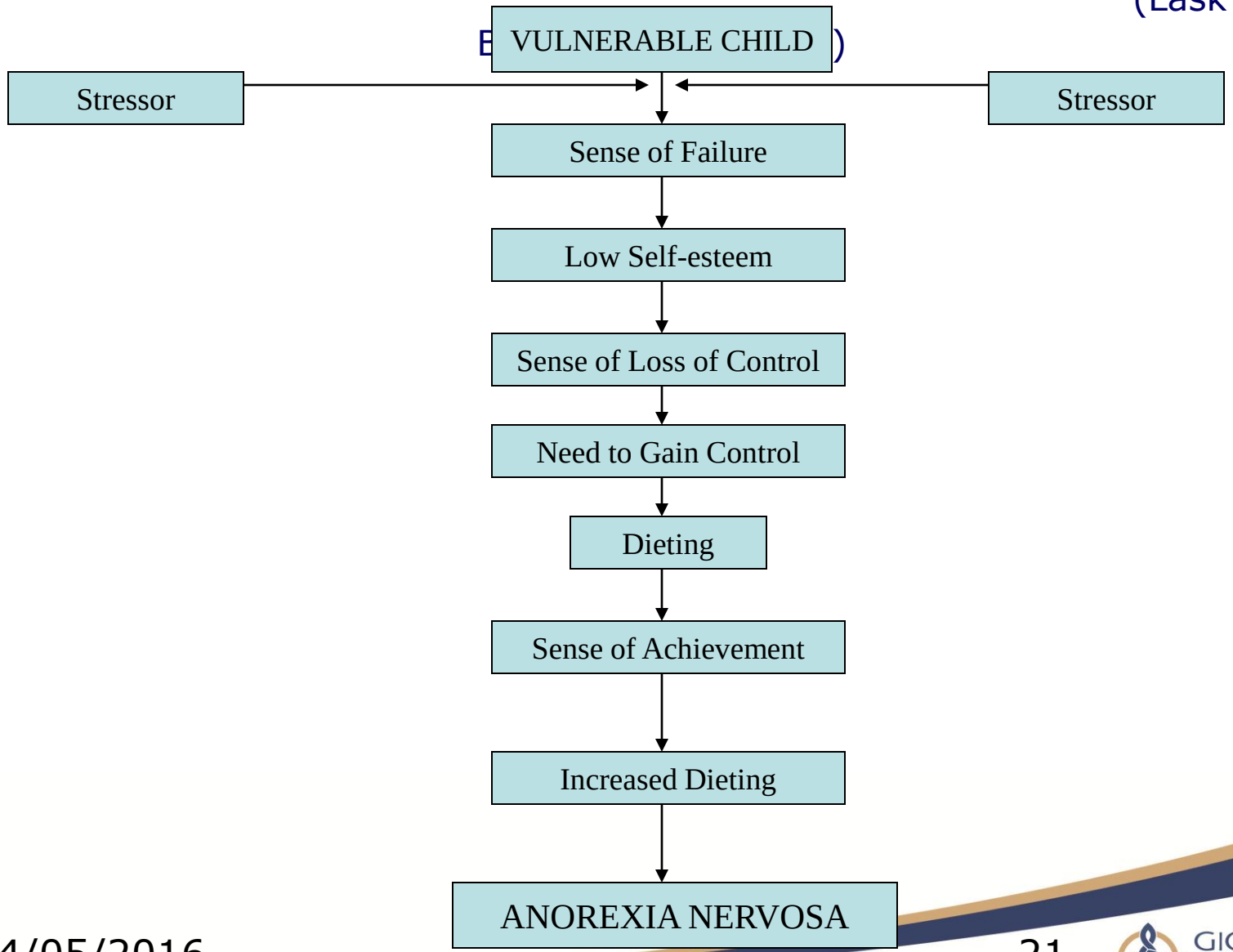
Development of an Eating Disorder (Lask & Bryant-Waugh 2000)



Development of AN in a Child Predisposed to do so

(Lask &

E)



Community treatment of ED

- MDT team with psychiatrist/physician, dietician, nursing, psychology, occupational therapy
- MDT approach, individual care package
- CBT-e, dialectical behavioural therapy
- Risk monitoring

In-patient treatment for ED

- SHED can offer short term intensive community package and longterm therapy
- At present majority of admissions are to specialist unit
- For chronically unwell patients that represents a very severe disruption to their life
- General wards have a good track record of managing some patients

Admission to mental health ward should be planned

- Patient is medically stable
- Patient is agreeing to an admission and full meal plan
- There is some evidence of engagement in community, such as attending appointments and monitoring
- Consultation with SHED, seen by dietician
- Ideally on Monday, never on Friday

Medical monitoring

- Base line FBC, U&E, LFT's, bone profile, glucose, ECG
- Daily nutrition bloods, reduce to twice weekly once stable
- Beware sudden weight gain as associated with oedema and re-feeding syndrome
- Patient feeling unwell could be another pointer to do urgent bloods
- Hypoglycaemia can occur at night following a large meal
- High index of suspicion for non compliance

Case vignette 1-chronic

- Ann has severe enduring AN with binging and purging. She has little motivation to change and often refuses monitoring. She has a history of low potassium and collapse. When unwell she refuses weighing. She looks unwell.
- She attended contemplation group psychotherapy with SHED.
- Who is responsible for her safety and how to risk manage her case?

Case vignette 2-family under pressure

- Emily has BMI of 16, her bloods and ECG are normal. Her family are desperate for help. She attends appointments but has not changed her eating pattern.
- How would you manage her case?

Case vignette 3-no parachute

- Age 32 after 10 MHA admissions and 4 specialist unit admissions , including rehab of 18months
- Severely ill with anorexia and alcohol dependent
- Advance directive signed when relatively well
- Found to have capacity and offered palliative treatment with family's support
- Court of Protection found her to lack capacity

Final judgement –May 2012

- Court of Protection found E to lack capacity.
- "a very difficult decision"

"E's case has raised for the first time in my experience the real possibility of life-sustaining treatment not being in the best interests of a person who, while lacking capacity, is fully aware of her situation. She is in many ways the opposite of a PVS patient or a person with an inevitably fatal condition. She is described as an intelligent and charming person. Albeit gravely unwell, she is not incurable. She does not seek death, but above all she does not want to eat or to be fed. She sees her life as pointless and wants to be allowed to make her own choices, realising that refusal to eat must lead to her death. Her situation requires a balance to be struck between the weight objectively to be given to life on one hand and to personal independence on the other.

Capacity

- On 24 July 2011, a doctor (Dr H) expressed the opinion that E had capacity, referring to the statutory test but not providing any deeper analysis.
- On 25 July, E signed a note reading *"I do not want to be resuscitated or given any medical intervention to prolong my life."* This was countersigned by her mother.
- At the end of July, Dr E, a consultant psychiatrist expressed the view that E was not expressing a consistent and capacitous wish to die. E was placed under compulsory section (MHA s. 3). At the same time, her parents expressed doubts about her true intentions. Medical, social work and legal professionals were all confused about whether or not she had capacity in an area referred to in the notes at one point as *"a legal minefield".*

Advance directives

- In August and September 2011, E was either pulling out her PEG line or agreeing reluctantly to it remaining in, in the hope that she would achieve sufficient weight to be regarded as capable of making another advance decision.

- On 3 October, E signed a formal advance decision, witnessed by her mother and a mental health professional, stating that if she was close to death she did not want tube feeding or life support, but would accept pain relief and palliative care. At the time this document was signed, her BMI had briefly peaked at 15.
- I accept that at the time the October 2011 decision was signed, E and her mother had been given reason to believe that E had capacity. E had the benefit of advice from her independent mental health advocate and from a solicitor. This also appears to have been the general medical view, but no formal capacity assessment was undertaken at the time. Moreover, E was again placed under Mental Health Act section on the day the document was signed and on the next day she was received into the care of Professor L for assessment. In his report made on 17 October, Professor L does not specifically deal with the question of capacity, but his general approach can be deduced from the fact that he recommended treatment, despite recording E's opposition very fully.

Case vignette 4 –unusual presentation

- SHED receives approx 2-3 referrals a year of patients above the age of 65
- Referrals are characterised by typical triggers in the elderly such as:
- depression
- attempt to change life circumstances,
- wish to gain control over an aspect of their life

Case 4-protest

- Rosemary is 70 and has Parkinson's disease. Concerns were raised in Parkinson's clinic about her weight. Her BMI was 14 and she was referred to MHSOP team. Referral was initially rejected on the basis of lack of mental illness.
- She was a highly driven professional, who was bored, felt slighted in clinic and had a history of depression. She also had a history of mild body image difficulty in her youth.

- Rosemary benefitted from supportive approach in MHSOP, day hospital and dietetic support and over 6 months recovered to BMI of around 18.
- It was difficult to differentiate whether her weight loss was self induced or caused by depression, but it improved on Mirtazapine