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A Nurse Perspective: The Medical Complications of Eating Disorders

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- The objectives of today's discussion will be:
  - to reflect on healthcare's view and treatment of eating disorders
  - to review the types of Eating Disorders and their associated medical complications
  - and to give tips for how some of these symptoms and discomfort can be eased

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STATS and RISK FACTORS

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- Eating disorders are among the deadliest mental illnesses, second only to opioid overdose
- 9% of the U.S. population, or 28.8 million Americans, will have an eating disorder in their lifetime
- Less than 6% of people with eating disorders are medically diagnosed as "underweight

- Genetic predisposition
- Higher prevalence of eating disorders in clients who have relatives with an eating disorder
- Environmental factors
  - Social: teasing, bullying, trauma
  - Media: weight stigma
- Type I diabetes
- Psychological profile: anxious, perfectionistic, rigid

Some Background

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- The medical misdiagnosis of eating disorder clients and the catastrophic consequences
    - ADD, ADHD
    - Euthyroid sick syndrome: over prescribing of thyroid medication

Mind body connection

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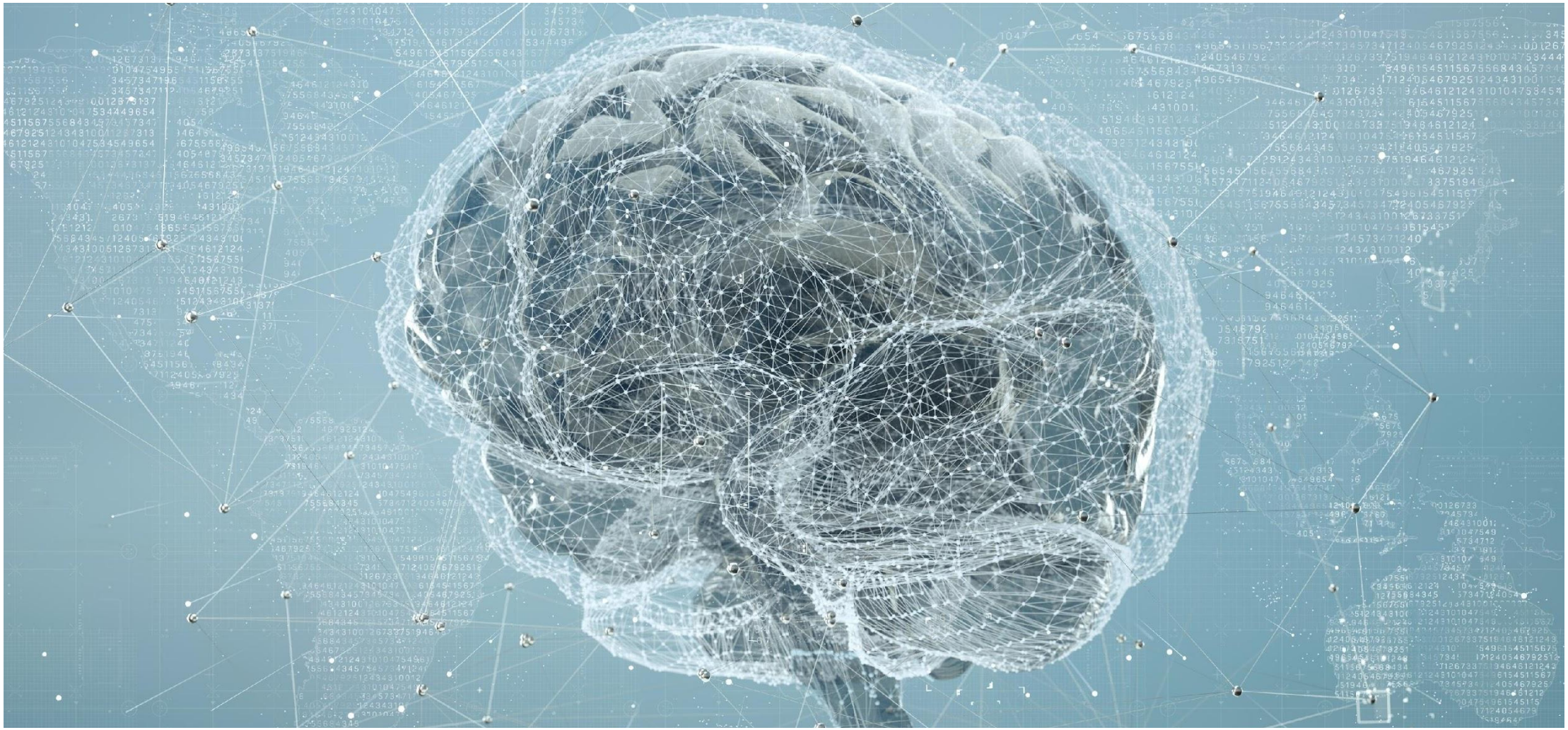

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The Medical Complications Based on Eating Disorder Diagnosis

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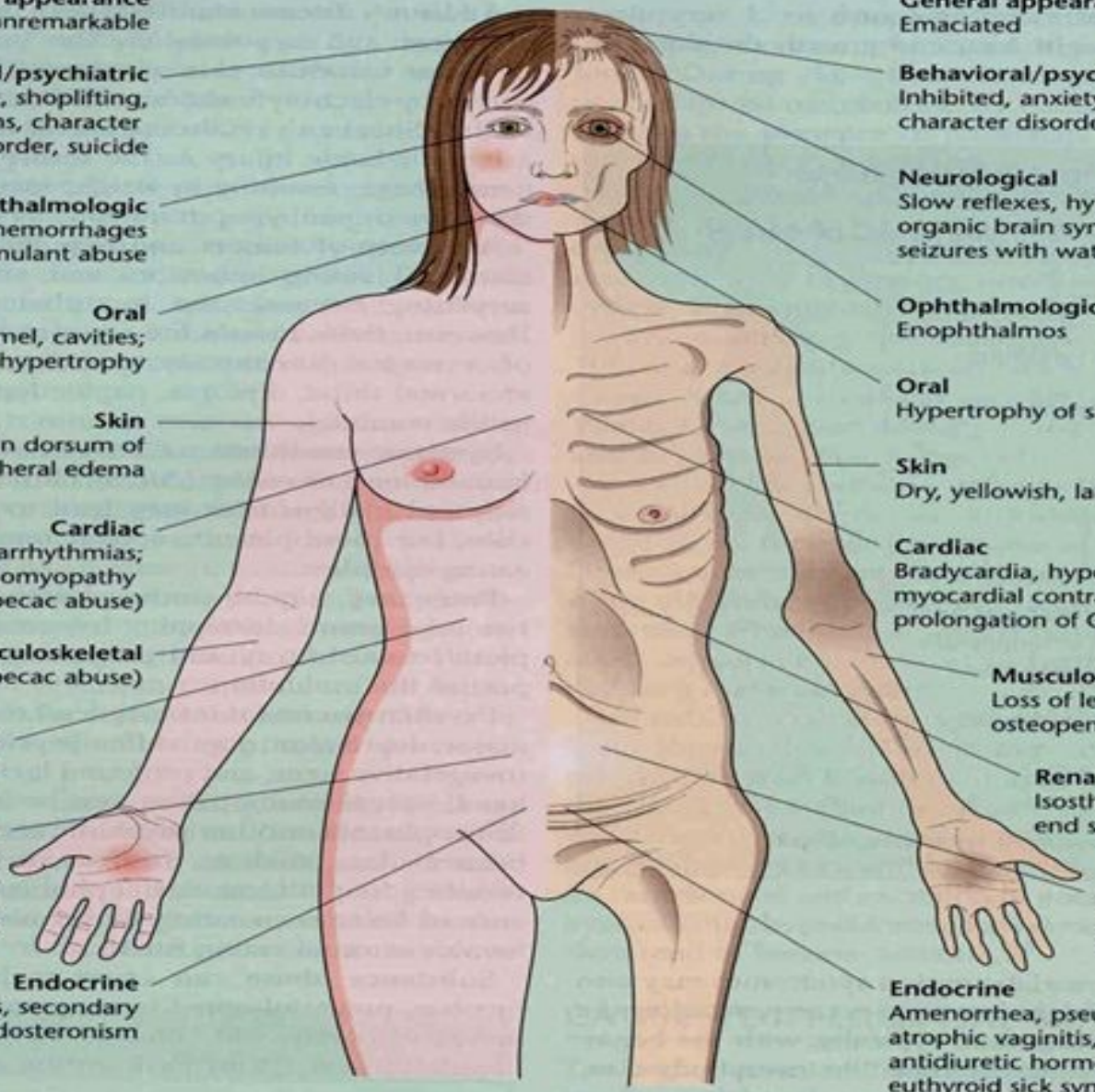
SYMPTOM COMPLEXES



Purging

General appearance
Often unremarkable

Behavioral/psychiatric
Impulsive, sexual acting out, shoplifting, mood disorders, addictions, character disorder, suicide

Ophthalmologic
Conjunctival hemorrhages
Mydriasis with stimulant abuse

Oral
Erosion of dental enamel, cavities; marked parotid hypertrophy

Skin
Russell's sign (callosities in dorsum of hand; peripheral edema

Cardiac
Irregular pulse, cardiac arrhythmias; sudden death; cardiomyopathy (ipecac abuse)

Musculoskeletal
Myopathy (ipecac abuse)

Renal
Pseudo Bartter's syndrome

Gastrointestinal
Diarrhea, melena, cramping (laxative abuse), GE reflux, chest pain/esophagitis, Mallory Weiss tears

Endocrine
Irregular menses, secondary hyperaldosteronism

Starvation

General appearance
Emaciated

Behavioral/psychiatric
Inhibited, anxiety disorders, mood disorders, character disorder, suicide

Neurological
Slow reflexes, hyperactive, hypervigilant, organic brain syndrome, brain atrophy, seizures with water intoxication

Ophthalmologic
Enophthalmos

Oral
Hypertrophy of salivary glands

Skin
Dry, yellowish, lanugo

Cardiac
Bradycardia, hypotension, impaired myocardial contraction, mitral valve prolapse, prolongation of Q-T interval; sudden death

Musculoskeletal
Loss of lean body mass, osteopenia–osteoporosis

Renal
Isosthenuria, renal stones, end stage renal disease

Gastrointestinal
Constipation; delayed gastric emptying

Endocrine
Amenorrhea, pseudo hypothyroidism, atrophic vaginitis, breast atrophy, decreased antidiuretic hormone, delayed puberty, euthyroid sick syndrome

Anorexia Nervosa

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DSM-5 criteria

- Restriction of calories with regards to body requirements
- Intense fear of gaining weight
- Significant body disturbance

Subtypes

- Restricting
- Binge-purge

Systems affected by anorexia nervosa

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- Vital Signs
- Metabolism
- Bones
- Cardiac
- Gastrointestinal
- Neurological
- Labs (electrolytes, other blood tests_
- Circulation
- Sleep
- Reproductive
- Skin/Hair/Nails
- Musculoskeletal
- Immune

Vital Signs

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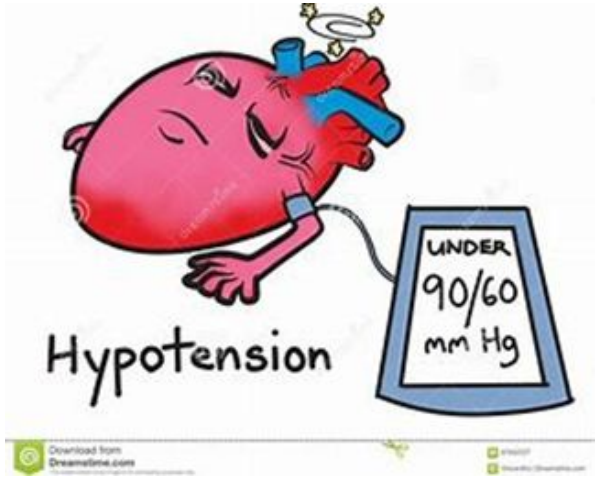
- **Hypothermia:** low body temperature
  - < 96.8 F or 36 C
- **Hypotension:** low blood pressure
  - BP < 90/60 mmHg
- **Orthostatic Hypotension**



Vital Signs

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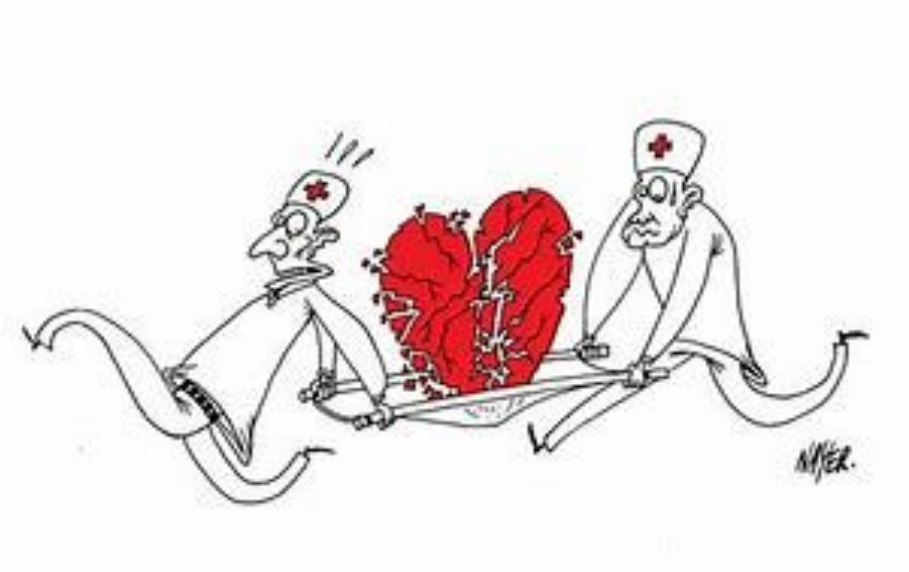
Tachycardia: fast heart rate

- > 100 bpm
- Due to cardiac muscle atrophy
- Resting bradycardia with exertional tachycardia
  - Marker of a deconditioned heart
  - Differentiator between starved heart and athletic heart

"Normal Heart Rate"

- In severe malnutrition maybe sign of underlying pathology



Vital Signs: Treatment

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- Recognition of “abnormally normal” vital sign changes due to malnutrition
- DO NOT treat hypotension unless patient is symptomatic
- DO NOT treat bradycardia unless patient is symptomatic

Metabolism-the amount of energy your body needs to neither lose nor gain weight

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- Heart rate drops
- Blood pressure drops
- Digestion is slowed
- Circulation to hands and feet slows
- Caloric needs decrease
- Early satiety
- Constipation

Skeletal: **Osteopenia** (Reversable) and **Osteoporosis** (non-Reversable)

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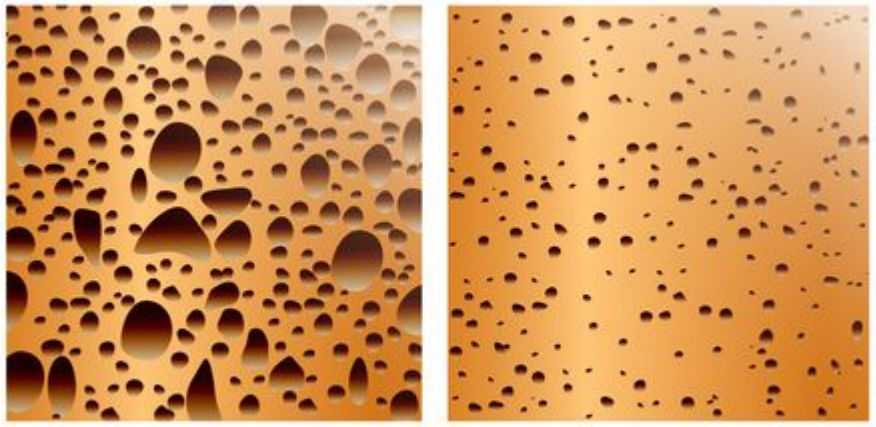
Osteoporosis is a disabling, painful condition, involving severe bone loss that can lead to:

- Disability
- Chronic pain
- Loss of stature
- Bone fractures

Interventions:

- Dexa Scan
- Weight restoration
- Calcium and vitamin D supplementation
- encouraged to maintain their weight and eat food rich in calcium



Cardiac

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Bradycardia: Heart rate < 60 BPM

Due to:

- Slowed metabolic rate
- Energy conservation
- Increase in vagal nerve tone: vagus nerve stimulates certain muscles in the heart that help to slow heart rate. When it overreacts, it can cause a sudden drop in heart rate and blood pressure, resulting in fainting

- Athletic Heart vs. Deconditioned Heart
- Walking pulse

Cardiac

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- Arrhythmias:
  - abnormal EKGs
- Structural:
  - Myocardial atrophy
  - decrease mass in the left ventricle

Vitals:

- profound bradycardia
- hypotension

Gastrointestinal Issues

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- knowledge about GI symptoms is key
- Gastroparesis: delayed stomach emptying
  - universal in weight loss regardless of body size
  - causes early fullness, nausea, bloating, gassiness
  - common in weight loss and restriction

Gastroparesis

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- Abdominal fullness/heaviness
- Nausea/vomiting
- Bloating
- Early satiety with even small meals
- Abdominal pain
- For the purgers
  - "this morning I threw up last night's dinner"

Gastroparesis:

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Interventions:

- Acknowledge that the symptoms have an organic root
- Work with the RD to create small frequent meals and snacks that are energy dense. Avoid high fiber foods eating 6 times a day is the most effective treatment.
- Fluids between meals to reduce feelings of fullness and avoid fluid restriction
- Heating pads after meals
- If medically stable promote movement
- Consult with a medical doctor:
    - Reglan (metoclopramide)

- Resolves with weight restoration

Refeeding Belly

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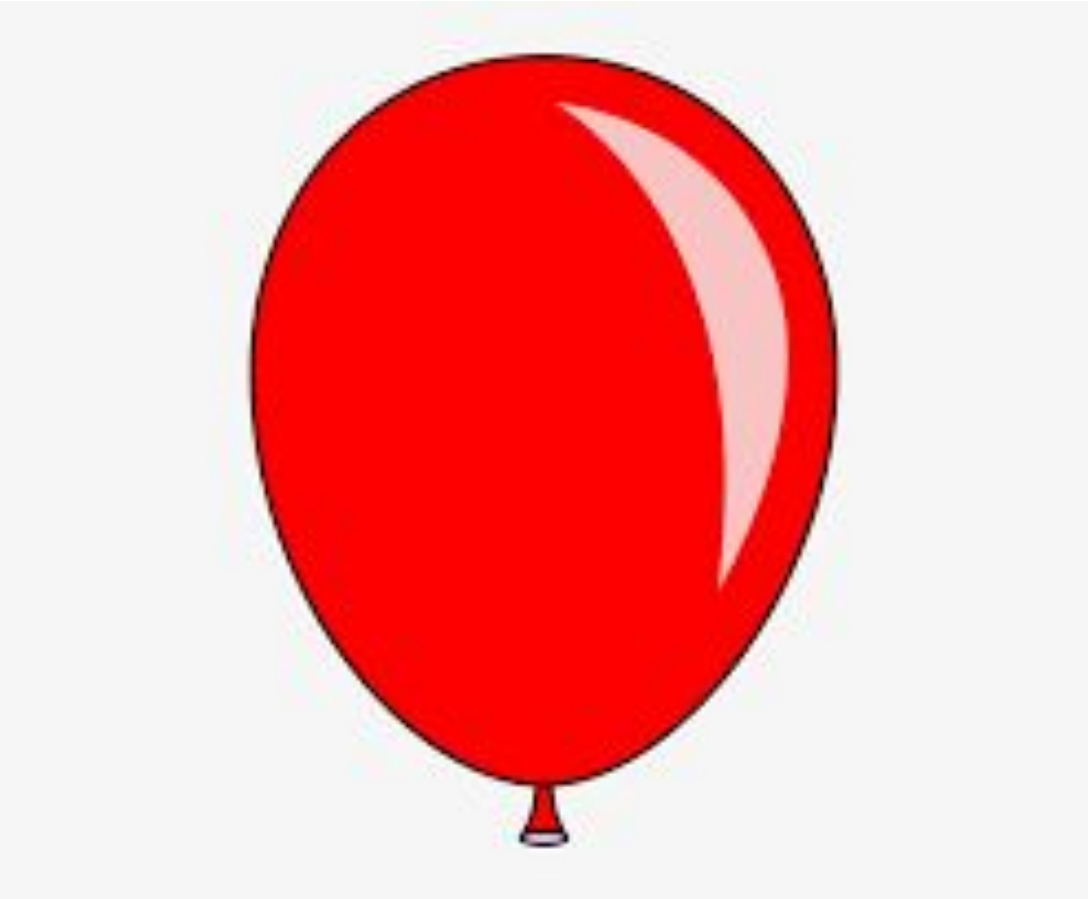

- Not a clinical definition
- Weight goes to abdomen to protect organs before it is redistributed to rest of the body
- Balloon story

Constipation

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Rome IV criteria for constipation –experience at least two of the following **symptoms** over the preceding 3 months:

- Straining more than 25% of defecations.
- Lumpy or hard stools over 25% of defecations.
- Sensation of incomplete evacuation more than one-fourth (25%) of defecations.
- Sensation of anorectal obstruction/blockage more than one-fourth (25%) of defecations.
- Manual maneuvers to facilitate more than one-fourth (25%) of defecations.
- Fewer than three spontaneous bowel movements per week.

Constipation

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- Adaptive mechanism to malnutrition and weight loss

Constipation:

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Interventions:

- Normalizing elimination patterns
- Communicate with RD and meal planning
- Increase activity if medically appropriate
- Abdominal x-ray if ordered
- Miralax osmotic laxative- increase hydration
- Avoid stimulant laxatives

Constipation

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History

- Not always reliable due to patient misreporting

X-Rays

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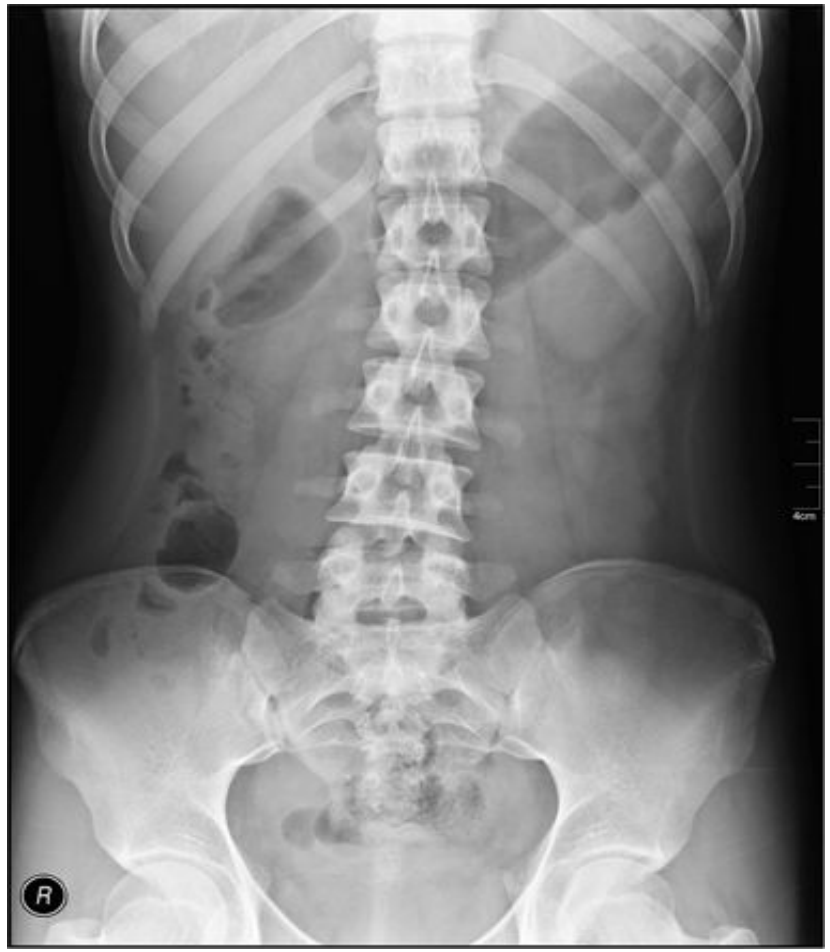

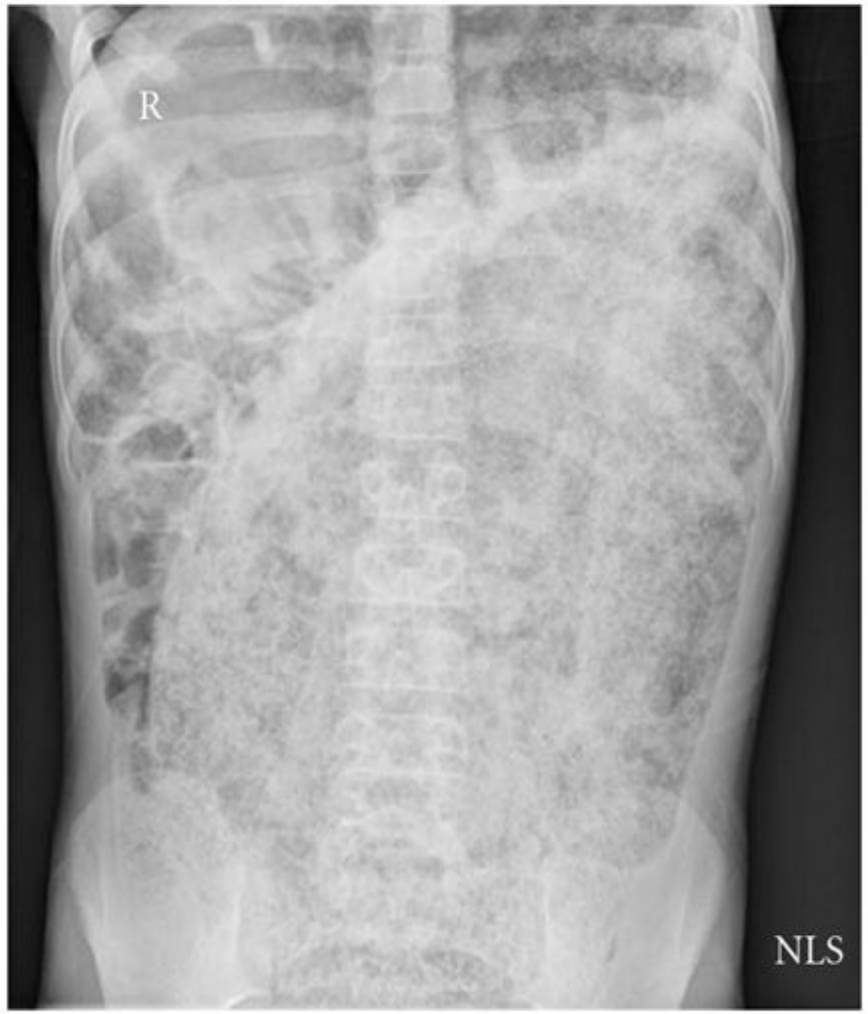

Reproductive:

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- Growth and reproductive systems revert to preadolescent
- Amenorrhea

Interventions:

- Hormone levels (labs)
- Identify potential for fertility issues. Talk about plans for children.
- OBGYN Evaluations required to screen for basic women's health prevention and wellness.

Liver: hepatitis

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- After the initiation of refeeding therapy in patients with severe malnutrition, the elevation of serum liver enzyme levels is sometimes observed
- Starvation causes injury and death to the cells of the liver, which leads to a rise in the liver enzymes that circulate in the bloodstream.
- Malnutrition-induced hepatitis is common among individuals with AN especially as body mass index decreases.
- Almost 50% of patients with anorexia nervosa have hepatitis
- Asymptomatic for patients, but still concerning as it can predict hypoglycemia

Hypoglycemia

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- Often undetected, body adapts to chronically low blood sugars
- Potentially life-threatening

Interventions:

- CMP (Monitoring)
- Blood Sugar Checks
- Education of the dangers of low blood sugars
- Coordination with RDs
- Having available glucose tabs to be administered when required

Refeeding Syndrome:

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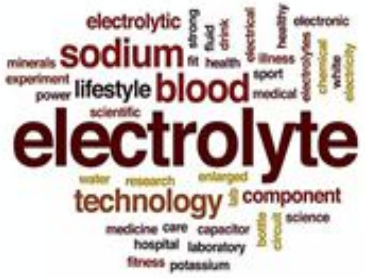
- First discovered in WWII – Minnesota Starvation Experiment
- Some symptoms and their consequences include:
  - Severe low phosphorus – acute heart failure, muscle breakdown, confusion, seizures
  - Severe low magnesium - arrhythmias, nausea and vomiting, weakness
  - Severe low potassium - cardiac arrest, arrhythmias, paralysis, breathing problems, fatigue
  - Edema/swelling (rapid weight gains, increased blood pressure and pulse)



- Who is at risk
  - Malnourished
  - Anorexia nervosa
  - Prolonged fasting
  - Significant weight loss

Refeeding Syndrome

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- Hypophosphatemia
  - muscle weakness, respiratory or heart failure, seizures, or comas
- Rhabdomyolysis
  - potentially life-threatening syndrome resulting from the breakdown of skeletal muscle fibers with leakage of muscle contents into the circulation
- Hemolysis
  - destruction of red blood cells
- Seizure
- Edema, heart failure

Refeeding Syndrome

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Guidelines for Management of Refeeding Syndrome:

Patients at risk for refeeding syndrome

ONE or more of the following-

· BMI < 16

· Unintentional weight loss of >15% in the previous 3-6 months

· Little or no nutritional intake for >10 days

· Low levels of potassium, phosphorus, or magnesium before refeeding

-or-

TWO or more of the following:

· BMI <18.5

· Unintentional weight loss of >10% in the previous 3-6 months

· Little or no nutritional intake for > 5 days

· History of alcohol abuse or drugs

Refeeding Syndrome Solutions:

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Intervention:

- Frequent lab monitoring- especially electrolytes
- Daily weights, looking for sharp increases and decreases
- monitoring of vital signs
- Gradual meal plan increases
- Leg elevation or compression stockings for edema- monitor any fluid shifts
- Administer Lasix if necessary
- Vitamin B-1
- Should resolve in three weeks

Abnormal Lab Values

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Electrolytes

CBC

Insomnia:

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- Common in anorexia
- Weight loss, starvation and malnutrition affect sleep
- Poor sleep quality
- Reduced sleep time

Interventions:

- Proper sleep hygiene:
  - Create bedtime rituals
  - Turn off electronics 2 hours before bed
  - Limit Caffeine, especially later in the day
  - Herbal products- essential oils, melatonin

Bulimia Nervosa:

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DSM 5 Criteria

- Recurrent episodes of binge eating (what's a binge?)
  - Recurrent inappropriate compensatory behaviors:
    - Vomiting, laxatives, exercise, diuretics, diet pills

Medical complications

- Type of purging
  - Vomiting
  - Laxative abuse
  - Diuretic abuse
- Frequency
- Sensitivity

Electrolyte imbalances

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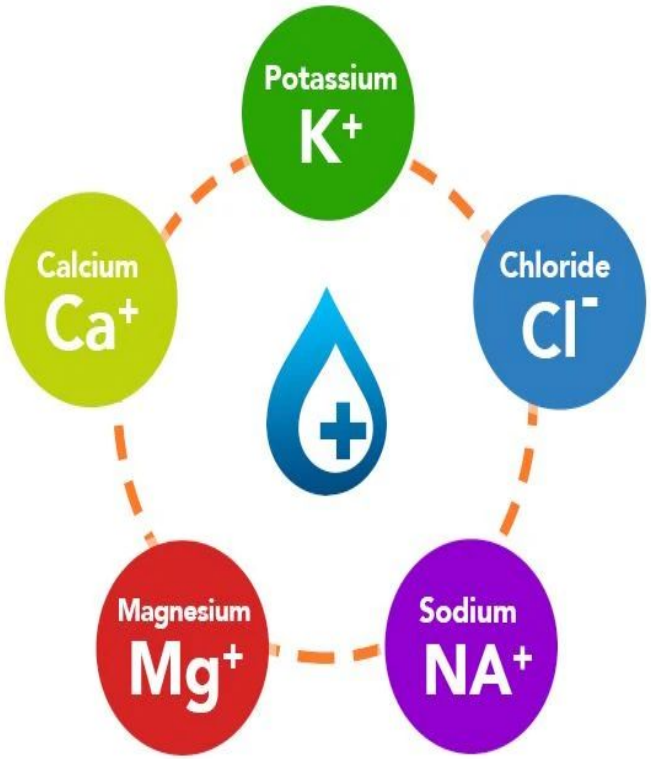
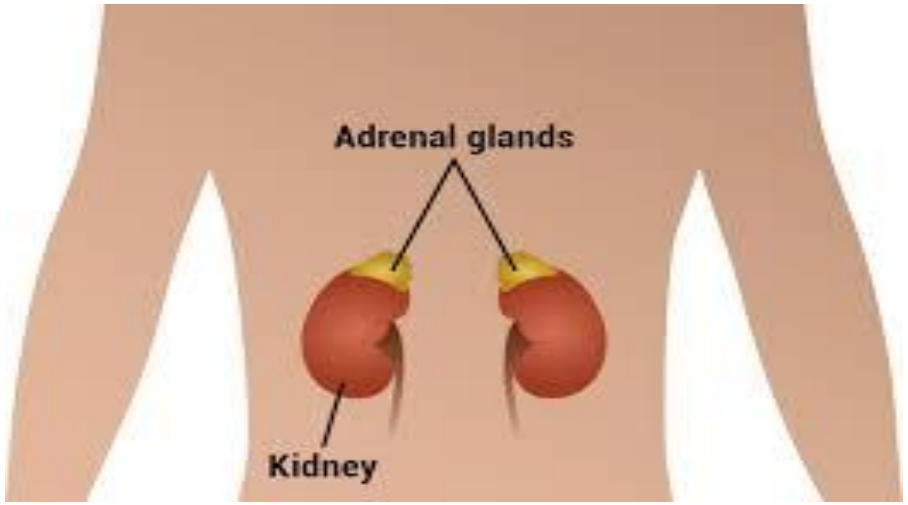
- Low potassium
  - severe hypokalemia can cause cardiac arrhythmias, muscle paralysis, and kidney disease
- Low sodium
  - severe hyponatremia can cause seizures or coma
- Bicarbonate (HCO3)
  - High in vomiting (alkalosis)
    - Severe metabolic alkalosis can cause confusion, cardiac arrhythmias, and neuromuscular irritability
  - Low in laxative abuse (acidosis)
    - Severe metabolic acidosis can lead to shock or death



Pseudo-Bartter Syndrome

- Brain thinks it's dehydrated
- When purging is stopped the adrenal glands overproduce aldosterone which causes severe retention of fluids and salt
- Sudden surge in weight



Pseudo-Bartter's Syndrome

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How do patients purge?

- Self-induced vomiting (60%)
- Laxative abuse (30%)
- Diuretic abuse (4%)
- Diet pills, thyroid hormone, etc (4%)

Nursing interventions

- Administration of Aldactone, aka Spironolactone (this med helps your kidneys produce more urine)
- close monitoring of electrolytes in labs.
- Comfort measures- leg elevation, low salt diet, close monitoring of fluids, monitor weight carefully, compression hose
- Close bathroom observations to prevent purging post meals.
- Education regarding laxatives, remove all laxatives from home environment.

Laxatives

- Laxative use results in more dehydration than vomiting
- Causes low potassium
- Metabolic acidosis (loss of bicarb in feces)- some side effects include fatigue, muscle twitching and spasms, muscle cramping, confusion and tremors
- Can create an overstretched of lazy colon

Complications of vomiting

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GERD:

- Weak esophageal sphincter causes acid to come back into the esophagus

- There is a bundle of muscles where the esophagus meets the stomach. When this sphincter is closed, it prevents acid and stomach contents from traveling backwards from the stomach. These muscles are not under voluntary control

Interventions- GERD

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- Proton Pump inhibitors:
  - inhibit certain cells from "pumping" acid into the stomach.
  - 30 to 60 minutes before a meal to prevent or reduce heartburn.
  - Less effective when taken on demand as when taken over a period of time

- Encourage non-spicy foods and caffeine reduction

- Prop head at night. Symptoms increase when client lies down.

- STOP PURGING! Increased bathroom observations. Urges to vomit will be high

Complications of vomiting

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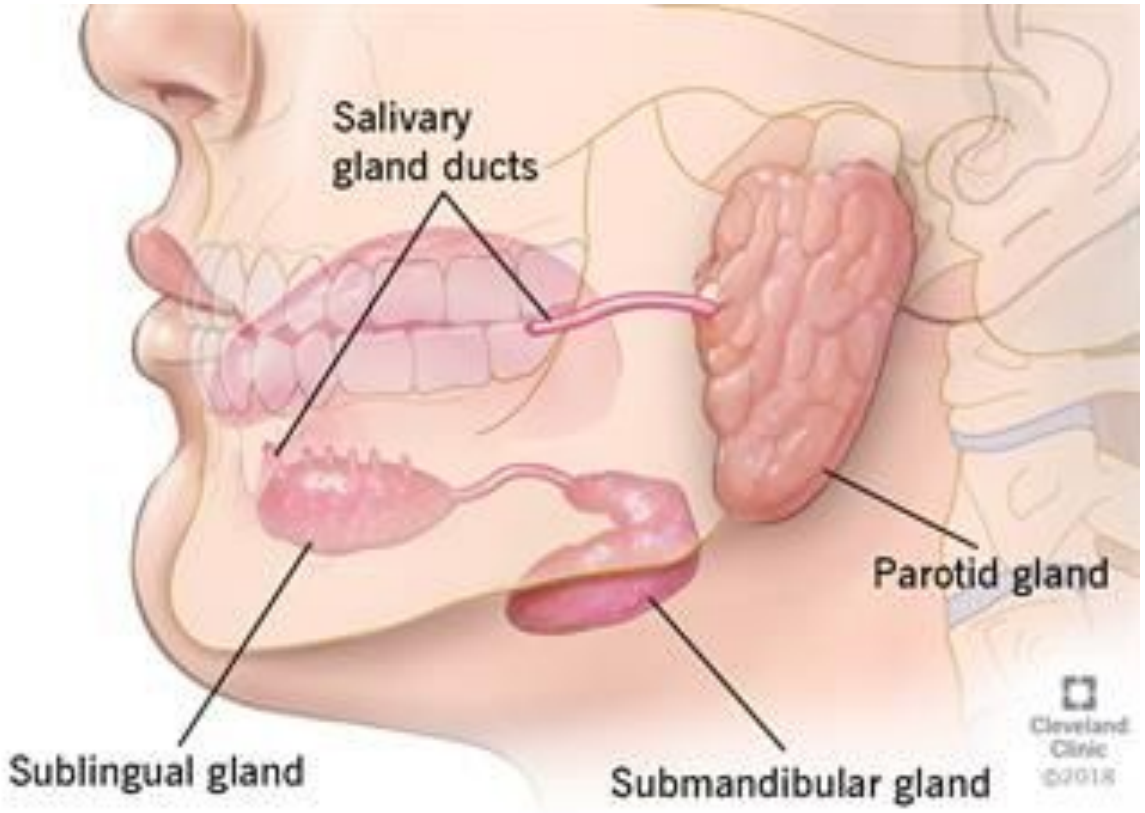
Sialadenitis:

- inflammation and enlargement of the salivary glands
- acute or chronic
- pain, tenderness, redness, and localized swelling



Interventions

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- Sialadenitis
  - Lemon drops to increase saliva, which decompresses the parotid glands
  - Warm compresses on cheeks
  - NSAIDs for pain management
  - gland massage

- 

Dental:

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- Enamel erosion, teeth appear translucent
- Cavities
- Over-brushing to mask the smell of vomit
- Brushing right after vomiting further erodes the enamel
- Acid constantly washing over the teeth

Interventions:

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- Proper education
- Do not brush teeth immediately after purging
- Rinse mouth with water and wait 20 min before brushing for acidity of the mouth to neutralize
- Use soft-bristled brush and non-abrasive toothpaste
- Routine dental check-ups

Hypoglycemia (Low blood sugar)

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Signs and symptoms

- Confusion
- Disorientation
- Sweating
- Palpitations
- Nausea
- Dizziness

*Can be asymptomatic: important to check blood glucose at every doctor's visit

Diagnosis: blood glucose <60mg/dL

Hypoglycemia

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Unrecognized and untreated

- Changes in mental status
- Seizure
- Arrhythmia
- Coma
- Death

Treatment

- Check glucoses every 2-4 hours depending on pt response
- Treat with juice or supplement
- Start nutritional program
- Glucose stores restored within 1-2 days of adequate nutrition

Diabulimia - ED-DMT 1:

- Recent studies have indicated that death rates from the combination of AN and DMT 1 is a devastating 35% in comparison from death rates from AN is 6.5%
- Women with DMT1 are 2.5x more likely to develop an eating disorder
- Manipulate insulin to create high blood sugars to lose weight

Health Consequences of Diabulimia

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- slow wound healing
- muscle atrophy
- dehydration
- electrolyte imbalances
- diabetic ketoacidosis

Interventions:

- Regular visits with certified diabetic educator in setting of eating disorder treatment
- Blood glucose and insulin management
- Regular accuchecks
- Menu planning
- HgbA1C and fructosamine

BED: Binge Eating Disorder

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Diagnostic Criteria:

- Recurrent episodes of binge eating characterized by both of the following:
  - Sense of lack of control
  - Eating an amount of food larger than normal in a discrete period
- Episodes are associated with 3 or more:
  - Rapid eating
  - Eating until uncomfortable
  - Eating large amounts of food in absence of hunger
  - Eating alone due to embarrassment
  - Guilt or disgust after
- distress regarding binge
- occurs, on average, at least once a week for 3 months
- No compensatory behaviors

Health At Every Size

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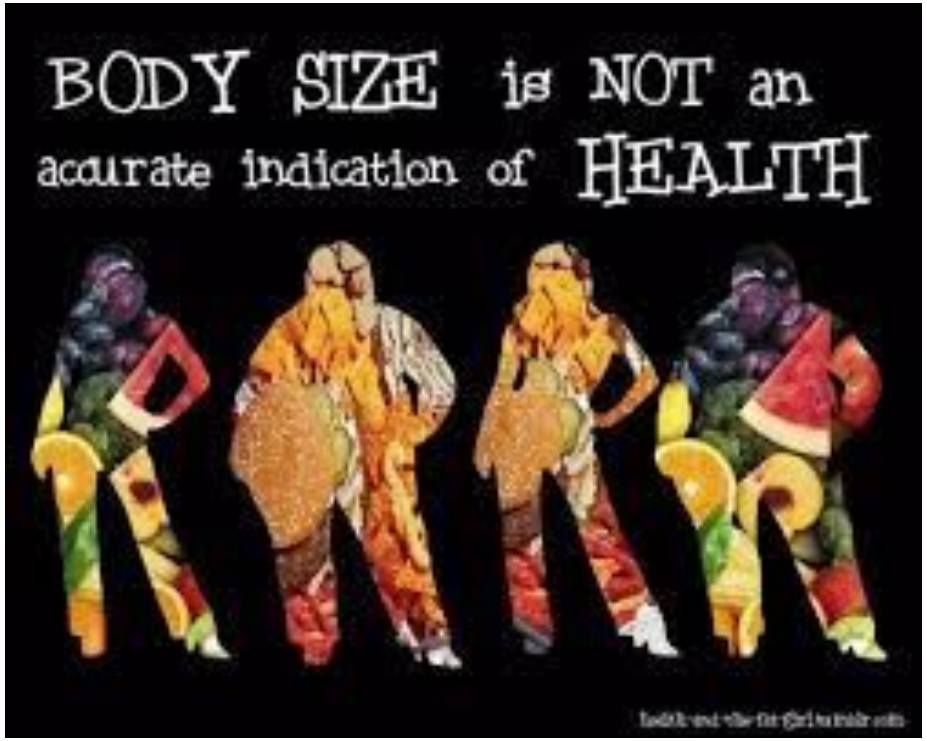

- Weight bias- Healthy at Every Size movement promotes acceptance and appreciation of one's body no matter the size!

Treatment and Interventions

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- Regular meal plan to reduce binges and achieve healthy eating habits
- Address negative emotions, such as shame and depression
- Psychotherapy:
  - CBT
  - Interpersonal
  - DBT
- Medications:
  - Topamax
  - Antidepressants
- Alsana is not a weight loss program!

Life in a larger body:

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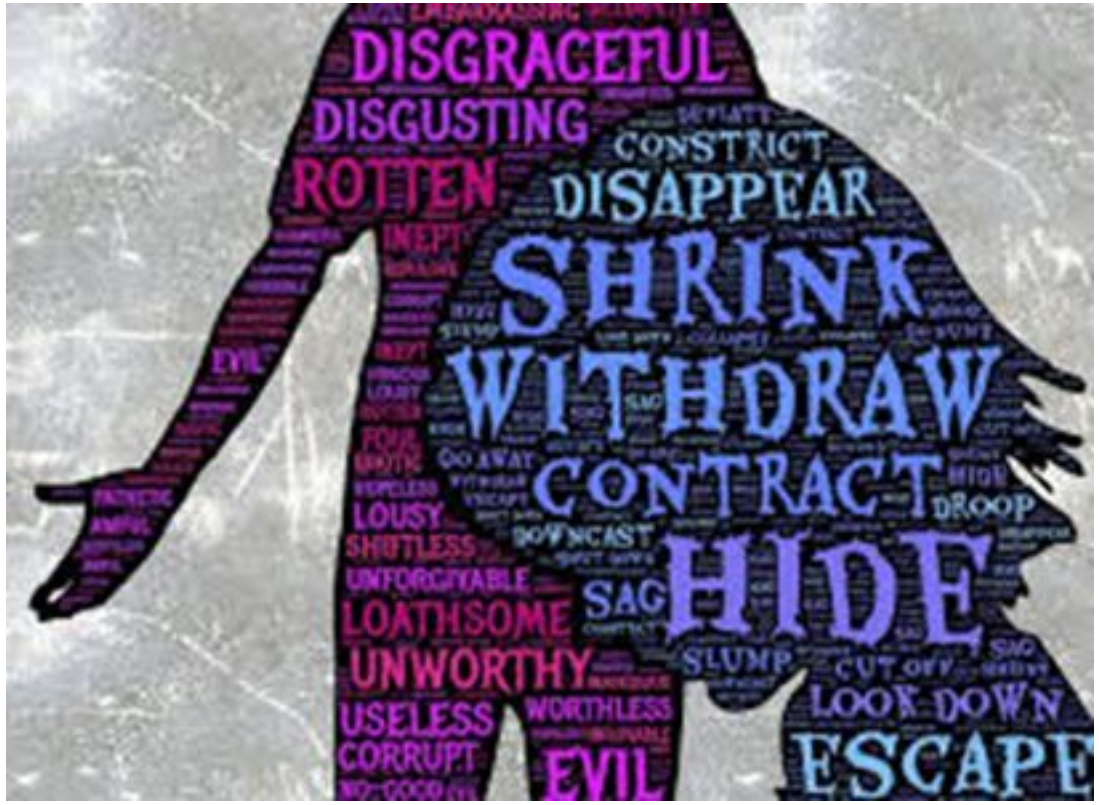
- Shame
- Feelings of being judged
- Misdiagnosed
- Misunderstood
- Is not "a lack of willpower"
- Exposed to societal body shaming
- Victims of bullying, including medical professionals
- Exposed to weight biases in the medical community
- Clients avoid wellness checks due to weight discrimination



Considerations:

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- Acknowledge the weight stigma within health care
- Give clients an opportunity to talk about their unjust experiences.
- Address symptom management place while working therapeutically on their eating disorder
- Promote the term *wellness* over *health* because the word health has been hijacked by our culture

You can be the solution and repair:

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- Reintroduction to wellness and prevention checks
- Encourage doctor appointments with support
- Coach outside doctors to not weigh, to treat the medical symptoms without the conversation about weight.
- Psycho-education that DIETS DO NOT WORK!
- Encourage mirror work

Resources

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- Series of Alsana Medical and Psychiatric Protocols: Dr Margherita Mascolo, MD, CMO, Alsana. And Dr Terry Eagan, MD, CPO, Psychiatrist
- Sick Enough: A Guide to the Medical Complications of Eating Disorders, Jennifer L Gaudiani MD, CEDS, FAED
- Gaudiani Clinic: www.gaudianiclinic.com
- International Association of Eating Disorders Professionals (iaedp): www.iaedp.com
- Diabulimia Helpline, Dawn Lee-Akers: 24-hour hotline (425) 985 3635 www.diabulimiahelpline.org

THE GOOD NEWS!

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NEARLY ALL MEDICAL COMPLICATIONS CAN RESOLVE

WITH CONSISTENT NUTRITION AND FULL WEIGHT RESTORATION

Questions?