Eating Disorders

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What is an Eating Disorder?

- Psychiatric conditions where the person has disordered eating patterns that can result in detrimental physical changes and, in severe cases, death.
- There are three categories of eating disorders:
  1. Anorexia nervosa
  2. Bulimia nervosa
  3. Eating Disorders Not Otherwise Specified (EDNOS)

Long, Sara. Nelms, Marcia. Sucher, Kathryn. Nutrition Therapy and Pathophysiology. Thomson Brooks/Cole. Belmont, CA. 2007

What Causes an Eating Disorder?

- The main causes of these disorders are still largely unknown.
- Certain factors linked with a higher prevalence of eating disorders:
  - Genetics
  - Environmental factors such as family life
  - Character traits such as extreme or premature dieting

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Diagnosing Anorexia Nervosa

- Anorexia Nervosa diagnosis:
  - Refusal to maintain a minimally normal body weight for age and height
  - Intense fear of gaining weight
  - A disturbed perception of body shape and/or size
  - Amenorrhea.

-2 types:

Restrictive type: Severe restriction of calories.

Binge-Eating/Purging Type:

Regular binging and purging tendencies

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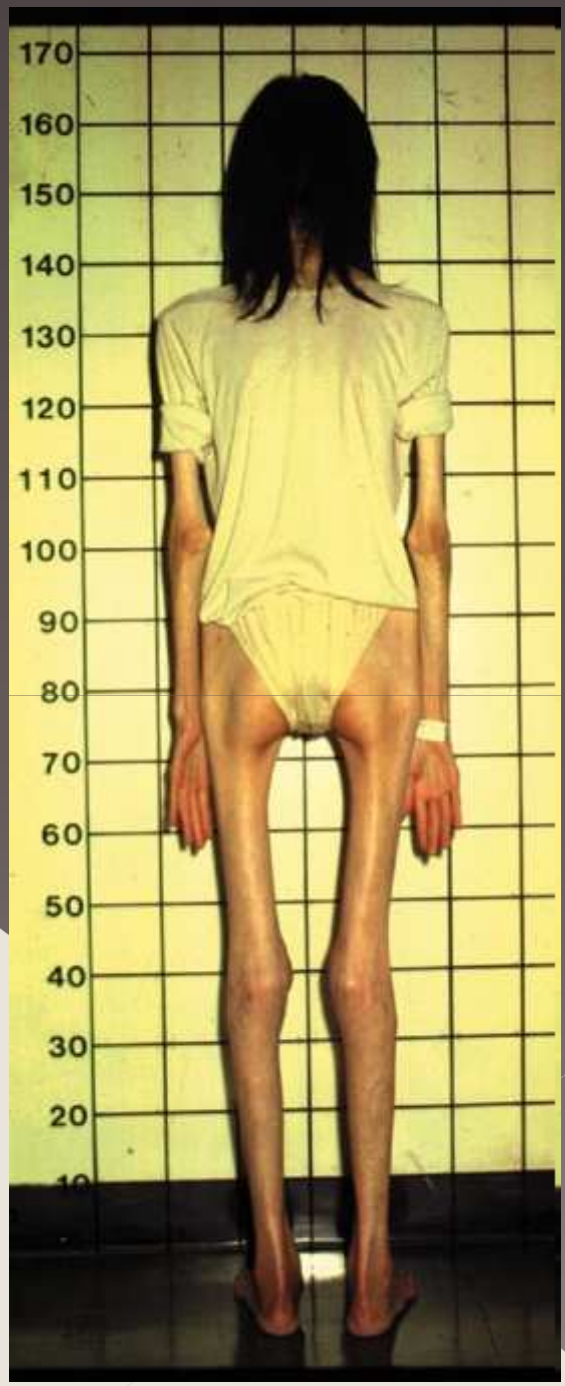
Diagnosing Anorexia Nervosa

- Anthropometrics:
  - -<85% IBW
  - -20+ years= BMI <17.5
- Additional Signs and Symptoms:
  - Self- induced starvation
  - Restrictive eating
  - Compulsive behavior, including dieting or exercising
  - Loss of hair
  - Excessive body hair



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http://www.anad.org/getInformation/abouteatingdisorders/anorexianervosa/

Characteristics of AN

- 90% of AN are white females http://www.youtube.com/watch?v=zIFAoRU1veo
- Most prominent in western societies
- Most commonly seen between ages of 14-19
- Character traits:
  - Perfectionism
  - Conscientiousness
  - Persistence
  - Obsessiveness

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Characteristics of AN

- Environmental Risk Factors
  - Family history of mood disturbances
  - Childhood physical or sexual abuse
  - Perception of low support from family
  - Pressure to be thin in environment
- Genetics:
  - Prevalence of AN in first degree family member

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Characteristics of AN

- Behaviors:
  - -Denial of the problem
  - -Obsession with dieting and exercising
  - -Preoccupied with thoughts of food
  - -Typically drawn to food-related occupations
  - -Irritable, moody, withdrawn socially, isolated, loss of libido

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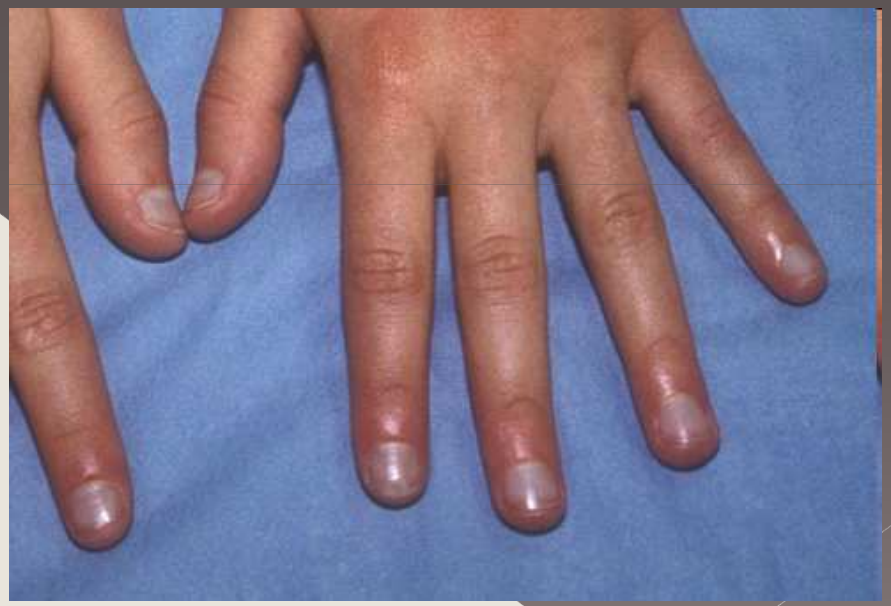
Health Complications

Mortality from AN is one of the highest of any psychiatric disorder:
5% death each decade



Skin and extremities:

- Cold hands and feet
- Dry skin
- Lanugo
- Alopecia
- Acrocyanosis
- Dependent enemias
- Hypercarotonemia

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Mortality Rates: Anorexia

Frequency of risk of death from anorexia for men and women by decade of age

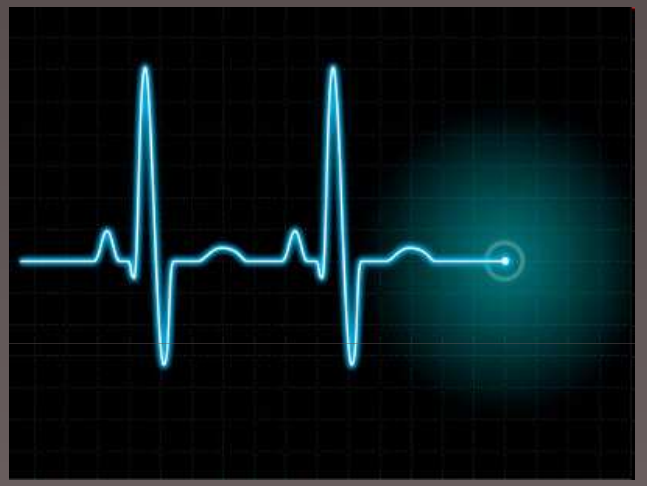
Age(years)	Females		Males	
	Anorexia deaths (5 year total)	Risk per 100,000 deaths (per year)	Anorexia Deaths (5 year total)	Risk per 100,000 deaths (per year)
5 to 14	2	12.1	1	3.9
15-24	28	62.9	2	1.4
25-34	52	65	6	2.7
35-44	56	43.1	4	1.4
45-54	36	16.4	5	1.3
55-64	60	12.2	9	1.2
65-74	69	6.8	18	1.3
75-84	114	7.4	62	4.2
85 or older	154	9.8	46	6.1
Total	571	11.03	153	2.73

P.L Hewitt, S. Coren, G.D. Steel. Death from anorexia nervosa: age span and sex differences. Aging & Mental Health 2001; 5(1): 41- 46

Health Complications

Cardiovascular

- Bradycardia
- Hypotension
- Orthostatic hypotension
- Cardiac arrhythmias
- EKG abnormalities



GI

- Enlargement of salivary gland
- delayed gastric emptying
- constipation

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Health Complications

Plasma/Serum

- ↑BUN & creatinine
- Hyponatremia
- ↓potassium & chloride (vomiting)
- Hypercholesterolemia
- Hypoglycemia
- ↓T3 and ↓T4
- ↓FSH
- Hypophosphatemia

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Health Complications

- Osteoporosis

  -Reduced bone mineral density

  -failure to achieve expected adult height

  -May never achieve peak BMD even after treatment

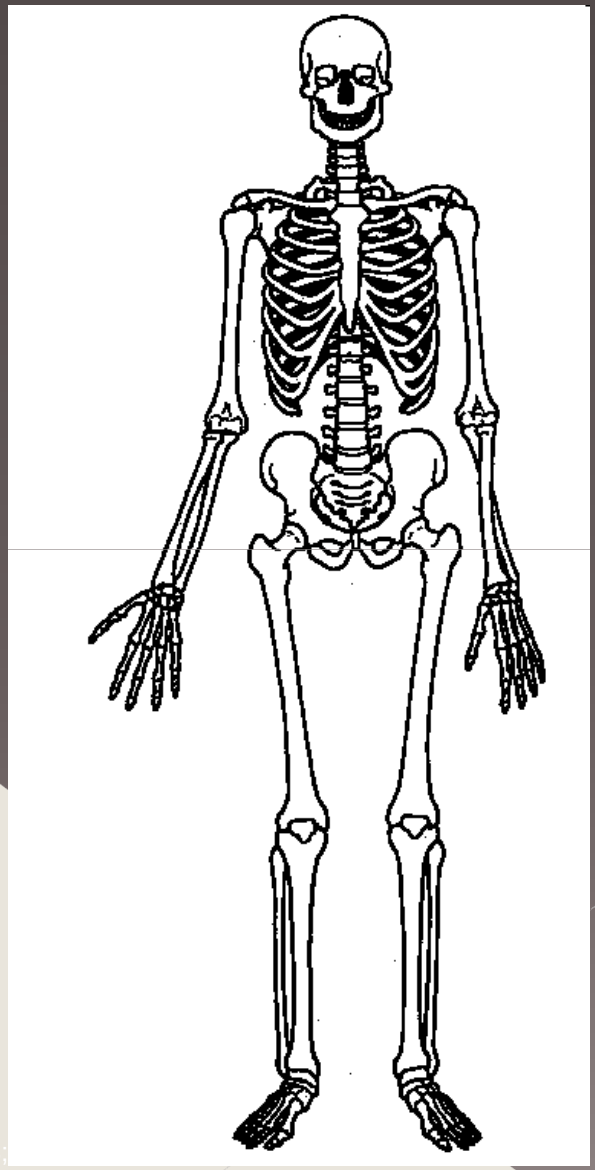
  -Complications → painful fractures, disfiguring kyphosis, loss of height, death

K. Katzman. Osteoporosis in Anorexia Nervosa: A Brittle Future?. CNS & Neurological Disorders, 2003; 2: 11-15D

- Osteoporosis

  -50% female AN

  -50% male AN, reduced mineral density of femoral neck, lumbar vertabrae



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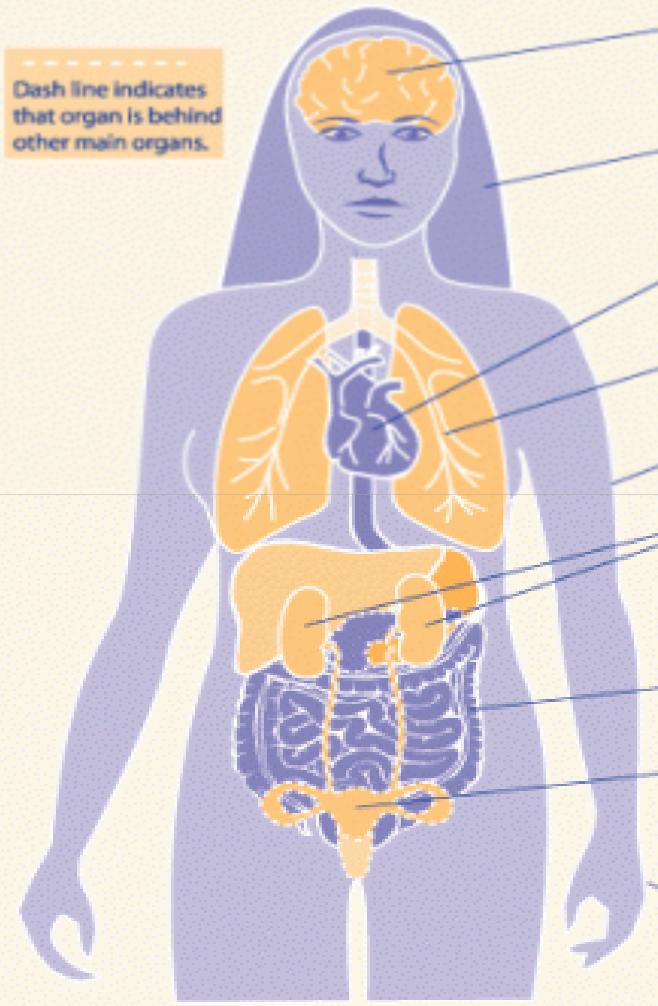
Anorexia affects your whole body



Brain and Nerves
can't think right, fear of gaining weight, sad, moody, irritable, bad memory, fainting, changes in brain chemistry

Hair
hair thins and gets brittle

Heart
low blood pressure, slow heart rate, fluttering of the heart (palpitations), heart failure

Blood
anemia and other blood problems

Muscles and Joints
weak muscles, swollen joints, fractures, osteoporosis

Kidneys
kidney stones, kidney failure

Body Fluids
low potassium, magnesium, and sodium

Intestines
constipation, bloating

Hormones
periods stop, bone loss, problems growing, trouble getting pregnant. If pregnant, higher risk for miscarriage, having a C-section, baby with low birthweight, and post partum depression.

Skin
bruise easily, dry skin, growth of fine hair all over body, get cold easily, yellow skin, nails get brittle

Treatment of AN

- Determined by severity of condition
- Referral to clinic (inpt. or outpt.)
- Psychological help
- Restore and maintain wt. to at least 90% IBW (2-3lbs per week for inpt., 0.5-1 for outpt.)
- Normal oral feedings-supervised
- Improve eating behaviors
- Possible multivitamin
- Monitoring

http://www.anad.org/getInformation/Informationabouttreatment/

Treatment of AN

- Different Treatment Options
  - Art Therapy
    - Music
    - Dance
    - Creative arts
  - Light Therapy

Frisch, Maria J. Franko, Debra L. Herzog, David B. Arts-Based Therapies in the Treatment of Eating Disorders. Eating Disorders; Mar/Apr 2006, Vol. 14 Issue 2, p131-142

Types of Bulimia

- Nonpurging Type:
  - During episodes, the person does not use vomiting or laxatives as weight regulation. Instead, engage in excessive exercise or fasting.
- Purging Type:
  - During episodes, person has times of self- induced vomiting, use of laxatives, or other medications to maintain or lose weight.
  - 80-90% of this type perform self-induced vomiting as main behavior

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Diagnosing BN

1. Binge Eating:
   - Eating very large amounts of food in a short time.
   - Feel out of control in the amount of food they are eating
2. Preventative Behavior to Avoid Weight Gain
3. Behavior or binging occurs two times a week for 3 months.
4. Judge themselves based on body shape or weight.

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Characteristics of BN

- Common in women from Western countries
- 90% female
- Onset in early adulthood or late adolescence.
- In women 16-35, seen in 1 to 3% of women.
- Normal weight and menstruation
- 50% of patients experience recovery within 10 years.

Kaplan, Allan. Woodside, Blake. Predicting the Onset of Anorexia Nervosa and Bulimia Nervosa. Eating Disorders Review 2002, 13(6): 3

Health Complications of BN

- Generally not life-threatening
- Skin: Calluses on hands due to vomiting
- Cardiovascular: Syrup of ipecac can cause arrhythmia or changes in heart function.
- Dental: Damage to enamel, dental caries, esophagus
- Laxative dependence: due to frequent use, causes constipation as well

Broussard, Brenda. Women's Experiences of bulimia nervosa. Journal of Advanced Nursing 2005; 49(1): 43-50

Treatment of BN

- Main goal: normalize eating habits and end detrimental behavior (purging, fasting, binging)
- Role of dietitian: ensure that the patient eats an adequate amount of calories and develop a meal plan.
- New treatment research:
  - Use of anti-depressants
  - Eye movement studies
  - Self-help groups

http://www.anad.org/getInformation/Informationabouttreatment/

Bacaltchuk J, Treglio RP, Oliveira IR, Hay P, Lima MS, Mari JJ. Combination of antidepressants and psychological treatments for bulimia nervosa: a systematic review. Acta Psychiatr Scand 2000; 101: 256-267.

Case Study

- Name: Paris Marshall
- Age: 34
- Gender: Female
- Diagnosis: Anorexia Nervosa with Binge/ Purge Tendencies

Patient History

- Attorney
- Started exercising excessively, purging, and laxative use in college at the prompting of her roommate.
- Didn't have a menstrual cycle for 2 years
- Tried to treat herself, but failed and reverted to familiar habits

Physical Appearance

- General: Tired, looks older than her age
- Dental cavity eroded
- Toenails and fingernails brittle
- Bruising and dry skin
- Edema

Nutrition and Food Recall

- Loves to cook but does not eat much of what she makes, especially of "bad" foods
- Reports intolerance to dairy, meat and sweets
- 24 hour recall showed mainly coffee and diet coke intake, with minimal other calories

Anthropometrics

- 5' 8" tall
- 115 lbs.
- BMI= 17.5
- IBW= 100 + (5 x 8)= 140 lbs IBW
- % IBW= 115/ 140 x 100= 82% IBW
  - Mildly depleted energy stores

Energy Needs

Harris Benedict Equation
BEE= 655 + 499.2 + 310.9 - 159.8
= 1305 kcals x 1.3
=1697 kcals/ day

Protein:
1.0 grams/ kg x 52 kgrams
=52 grams protein

Refeeding Syndrome

Lab Values

- Terms for skewed lab values:
  - Alkalosis: excess base in blood
  - Hypochloremia: low chloride
  - Hypokalemia: low serum potassium
  - Hyponatremia: low sodium in blood

Interpreting Lab Values

Labs	Normal	Actual	Interpretation
Albumin	3.2-5	3	Low due to trauma or metabolic stress (long term value)
Pre-Albumin	16 to 35	14.5	Low due to trauma or metabolic stress
Total Protein	6-8	5	Protein energy malnutrition
Potassium	3.5-5.5	3	Low due to alkalosis, laxative use, vomiting
Magnesium	1.8-3	1.7	Slightly low due to protein energy malnutrition
Glucose	70-100	115	Could be skewed because most likely not taken at fasting value
CPK	30-135	146	Sign of multi-organ dysfunction, due to protein energy malnutrition
HDL-C	>55	60	Could show liver dysfunction, decrease bile formation or hypothalamic dysfunction
T3	75-98	70	Thyroid hormone, due to estrogen imbalance
HGB	12 to 15	10	Protein energy malnutrition, possible Fe deficiency
HCT	37-47	30	Protein energy malnutrition, possible Fe deficiency

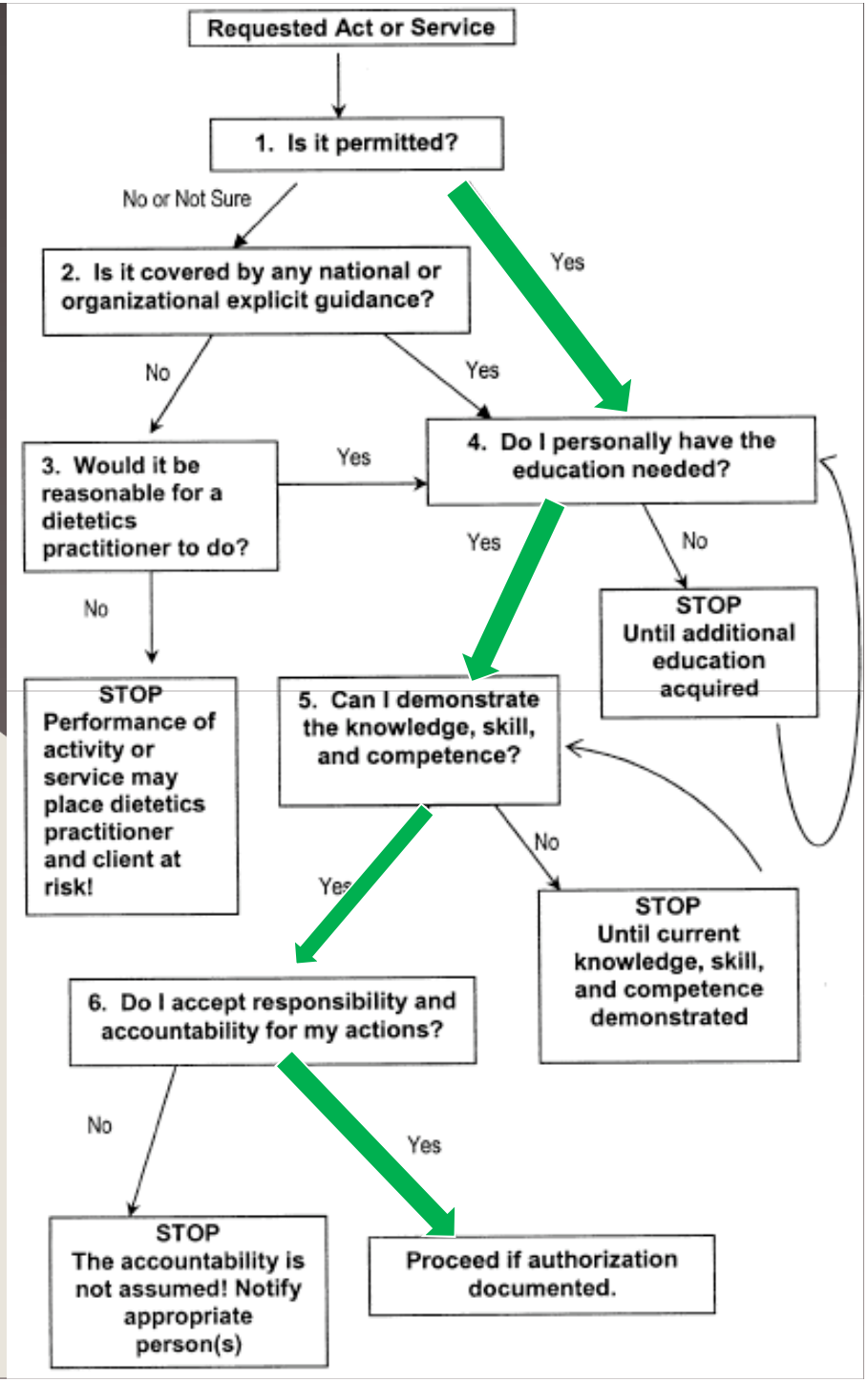
PES Statement

- Disordered eating pattern (NB-1.5) related to binging and purging tendencies as evidenced by history of restrictive intake and desire to keep weight under 120 pounds.

- Inadequate oral food and beverage intake (NI-2.1) related to disordered eating habits and behaviors as evidenced by a BMI of 17.5, poor oral intake and low albumin levels.

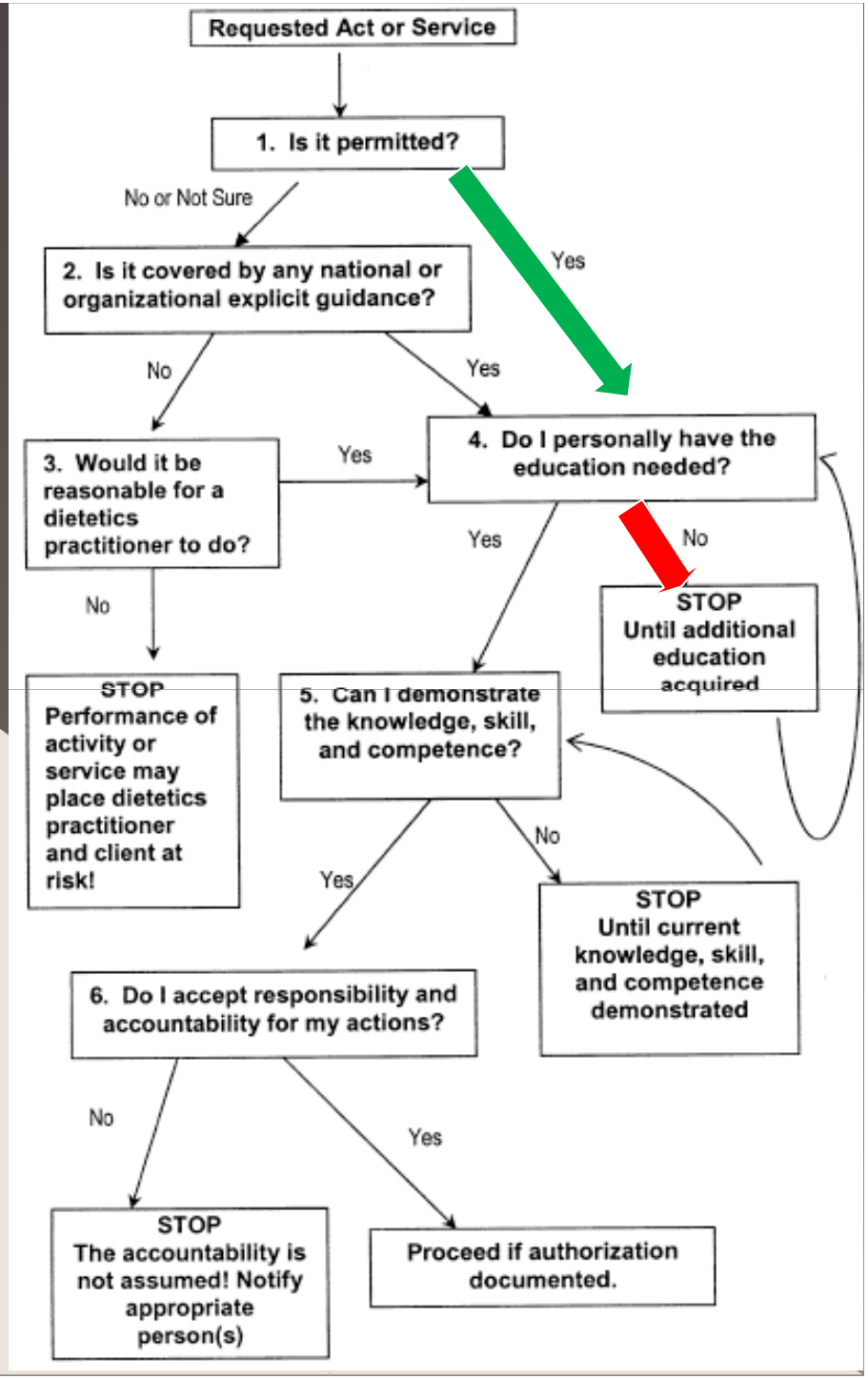
Treatment

- Gradually increase caloric intake until at proper level of calories
- Educate patient on nutrient needs



Treatment

- Refer to psychologist for mental health improvement
- Treatment for mental health issues



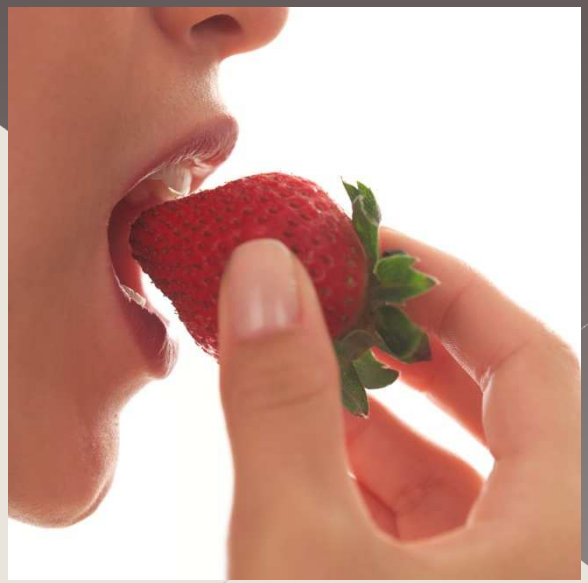
Medical Nutrition Therapy

- Short Term
  - No further weight loss
  - Gradually increase caloric intake to calculated needs (1697 calories)
  - Discontinue binging, purging, and self-starvation behaviors

- Long Term
  - Attain albumin level of 3.5g/dL
  - Attain weight of 126 lbs. (90% IBW)
  - Normalized Eating

Education

- Psychological (refer to psychiatrist)
  - Improve distorted body image
  - Identify underlying causes of eating issues
  - Improve self- confidence
- Nutritional Needs
  - Inform of amount of calories she needs
  - Balance calories in verses out in exercise
- Health Consequences
  - Osteoporosis due to amenorrhea
  - Impaired dental vomiting



24 Hour Recall

Beverages:	**Food:**
4 cups black coffee 24 oz. Diet Coke 18 oz. water 4 oz. orange juice	¼ whole-wheat bagel 6 green peas **Calories: ~200**

Sample Menu

Breakfast:	**Snack:**
½ whole wheat bagel 1 tbsp peanut butter 6 oz. black coffee 4 oz. Ca fortified orange juice	6 green peas 1 carrot, chopped 1 tbsp hummus **Snack:** 1 oz. almonds or cashews 1 oz. raisins **Calories: 640kcals** **Protein: 22g** **Fat: 26g** **Carbs: 85g**

Breakfast:	**Dinner:**
½ whole wheat bagel 1 tbsp peanut butter 6 oz. orange juice 6 oz. black coffee **Lunch:** ½ whole wheat tortilla 1 tbsp hummus ¼ cup black beans ¼ cup lettuce ¼ small tomato ½ orange	¾ cup pasta ¼ cup sauce ½ cup steamed vegetables ½ cup soy milk **Snack:** Banana **Calories: 1134** **Protein: 47g** **Fat: 32g** **Carbohydrate: 183g**

Breakfast:	**Dinner:**
1 whole wheat bagel 1 tbsp peanut butter 8 oz. calcium fortified orange juice 6 oz. black coffee **Snack:** 1 banana 6 whole wheat crackers **Lunch:** 1 whole wheat tortilla 1 tbsp hummus ½ cup black beans ½ cup lettuce ½ small tomato 1 orange	1 cup pasta ½ cup sauce (pesto, marinara) 1 cup steamed vegetables 1 cup plain soy milk **Snack:** 2 oz. almonds and cashews 1 oz. cranberries **Calories: 1939 kcals** **Protein: 74 g** **Fat: 54 g** **Carbohydrates: 313 g**

Robb, A, Silber, T. Orrell-Valente, K. Supplemental Nocturnal Nasogastric Refeeding for Better Short-Term Outcome in Hospitalized Adolescent Girls With Anorexia Nervosa. Am J Psychiatry August 2002;159:1347-1353

Follow Up

- Meet with outpt. dietitian once per month for 6 months to monitor weight gain and caloric intake
- Refer to case manager for psyche referral.

References

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