Eating Disorders: An Overview of Anorexia and Bulimia Nervosa

Purpose/Goals

This course provides an overview of Anorexia and Bulimia Nervosa. Criteria for these eating disorders will be reviewed. Risks and complications associated with these eating disorders as well as treatment modalities and nursing interventions will be reviewed. Lastly, the nurse’s role in assisting the person with an anorexia or bulimia toward recovery is discussed.

Objectives

1. Discuss the incidence of eating disorders
2. Recognize the diagnostic criteria for the major types of eating disorders
3. Identify signs and symptoms of eating disorders
4. Construct Nursing Diagnoses
5. Develop Goals and Outcomes
6. Recognize triggering and sustaining factors for eating disorders
7. Describe impact of eating disorders on adolescent developmental tasks
8. List complications from head to toe of eating disorders
9. Discuss three treatment modalities for the person with an eating disorder
10. Nursing Interventions
11. Describe Refeeding Concerns
12. List common medications prescribed to treat eating disorders
**Incidence of Eating Disorders**

Eating disorders are chronic mental illnesses characterized by relapses and remissions even when the patient engages in treatment. They carry the highest lifetime mortality rate of all the mental illnesses. Co-morbidities are extremely common with approximately 25% OCD and up to 50%-75% Major Depressive Disorder. Axis II personality disorders are common and substance abuse is often seen with bulimia.

Eating disorders are becoming widespread and the demographic trends of those at highest risk are changing. There is increasing incidence in the following populations:

Younger Children: Disturbing trends showing increased onset age 8-11

Adolescents: onset of eating disorders is most common in this age group

Middle Age Female: Increasing due to cultural glorification of youth and slimness

Males: Cultural focus on athletic fitness and perceptions of manhood

- Anorexia nervosa occurs in approximately 0.5%-1% of the female population, with onset usually between age 13 and 20

- It is increasing in the male population who are thought to make up 5%-10% of the anorexic population

- Mortality: estimated between 5% and 10% of those with the disorder. Purging by vomiting and OCD are associated with the least favorable prognosis

(Evans, et al)
• Bulimia nervosa is more common than anorexia with between 4% and 15% of female high school and college students. Age of onset is typically 15-18 years of age. Female to male ratio is approximately 11:1

• In bulimia nervosa it has been shown that a shorter duration between onset of symptoms and the first treatment intervention leads to the best outcome for recovery

• Bulimia and anorexia may be present in the same person, as many as 50% of individuals with anorexia develop bulimic symptoms, and some people with bulimia develop anorexia

• As these findings show, it is important to identify eating disorders as soon as possible after onset and begin interventions for best possible outcomes

**Diagnostic Criteria**

*Diagnostic criteria for Anorexia and Bulimia Nervosa from the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV)*

3 main distinctions:

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*Anorexia Nervosa*

Refusal to maintain body weight at or above a minimally normal weight for age and height, less than 85% of that expected, or failure to make expected weight gain during a period of growth, leading to body weight less than 85% of that expected.

Intense fear of weight gain or becoming fat, even though underweight.
Disturbance in the way in which one’s body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.

In post menarcheal females, amenorrhea (the absence of at least 3 consecutive menstrual cycles), or periods only occur with estrogen administration.

2 subtypes:

Restricting type: weight loss accomplished primarily through dieting, fasting, or excessive exercise. Binge eating or purging is not regularly engaged in.

Binge-eating/Purging type: Regular engagement in binge eating or purging (or both) during the current episode. Most with anorexia nervosa who binge eat also purge through self induced vomiting or misuse of laxatives, diuretics, or enemas. Some in this subtype do not binge eat but do regularly purge after the consumption of small amounts of food. This type engages in these behaviors at least weekly.

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*Bulimia Nervosa*

Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

Eating: in a discrete period of time (eg. Within any 2 hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances

A sense of lack of control over eating during the episode (eg. A feeling that one cannot stop eating or control what or how much one is eating).

Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self induced vomiting, misuse of laxatives, diuretics, enemas, or other medications, fasting, or excessive exercise.
The binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for 3 months.

Self evaluation is unduly influenced by body shape and weight

The disturbance does not occur exclusively during episodes of anorexia nervosa

2 Subtypes

Purging type: regular engagement in self induced vomiting or misuse of laxatives, diuretics, or enemas. It can be noted here that an “episode” may include multiple emesis in each episode.

Non purging type: person has used other inappropriate compensatory behaviors, such as fasting or excessive exercise, but has not regularly engaged in self induced vomiting or misuse of laxatives, diuretics or enemas.

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*Eating Disorder Not Otherwise Specified*

For females, those that meet all of criteria for Anorexia Nervosa but the individual has regular menses

All criteria for Anorexia Nervosa are met except that, despite significant weight loss, the individual’s current weight is in the normal range

All criteria for Bulimia Nervosa are met except that the binge eating and inappropriate compensatory mechanisms occur at a frequency of less than twice a week or for duration of less than 3 months.

The regular use of inappropriate compensatory behavior by an individual of normal body weight after eating small amounts of food (eg. Self induced vomiting after the consumption of two cookies)

Repeatedly chewing and spitting out, but not swallowing, large amounts of food (American Psychiatric Association, 2000)
Signs and Symptoms

Intense fear of gaining weight

This fear can be experienced at the level of terror for many patients as they enter treatment. Many have panic episodes prior to each meal. Self worth is measured against external standards, such as the numbers on the scale.

Cognitive Distortions

Black and White Thinking

• Affects ability to accept personal imperfection, impairs decision making, performing a task, or feeling an emotion as these activities require integrating the “shade of gray” encountered in everyday life

Magnification

• Distorted thoughts place undue emphasis on minor events. Gaining 2 lbs may lead to fear of gaining 100 lbs, or lead to refusal to wear certain types of clothing. Fears of getting fat from eating one dessert, believing that the moment eating begins, fat is being formed in the body.

Personalization

• An egocentric interpretation of impersonal events or over-interpretation of events related to the self

• Example: “I heard people laughing behind me in the checkout line at the store. I know they were laughing because I gained 2 lbs last week.”
Inappropriate Sense of Self-Reference

• Extreme sensitivity to the reactions of others leads to distorted perceptions that others are continually appraising their body, their eating, etc. etc. Paranoid thinking that others are talking about them leads to more and more severe withdrawal and isolation. Secrecy of eating disorder behavior leads to inability to eat in public at all. The need to plan for binging and purging limits the person to eating in isolation

Perfectionism

• Inability to attain perfection reinforces shame/guilt and leads to intense self loathing

• Where efforts to be perfect in one area fail, the determination to be “perfect” at controlling food intake can substitute for this “deficiency”, leading to increasing levels of preoccupation and obsession with food, weight, exercise, and self denial (ANRED)

Obsessive Food and Body Image Thoughts

• As the sense of being short of one’s ideal self intensify, more meticulous attention is devoted to the one area perceived to be successful: control of eating

• Distorted thoughts and perceptions of body image are obsessive and begin to occupy every area of functioning. Many keep journals filled with lamentations of hatred of perceived body flaws, detailed plans for accounting for each and every calorie to be consumed for the day. Self assessment and re-assessment become ritualistic. When unable to meet self expectation, punitive eating behaviors are employed, perhaps by cutting calories another 100 for the next day.
• Obsessive reassurance seeking by constant checking in the mirror, palpating the thighs and abdomen, and comparing oneself to others become pathological. (ANRED)

• Experience of eating food is grossly distorted. Upon eating feared foods, experience sense of immediate “getting fat”.

• Not only is there visual distortion when looking in the mirror, or constantly inspecting and palpating the body parts, but there are also mental distortions, where overestimation of body weight and size is believed. This is one of the reasons to make exceptions to blind weights. Not knowing the numbers can lead to magnification of the weight. On the other hand, knowing that weight has exceeded desired point causes fears of continued explosive weight gain.

• Often times extensive research is done by the teen with magazines, recipes, internet search, and minute details are learned about exactly how many calories are in a food item, and exactly how much, and for how long, to exercise to burn them off

Emotional eating (bulimia): is triggered by psychological hunger, rooted by a desire for something other than food, but eating numbs those feelings. Satiety cues are overridden

Most eating disorders are secret for a long time before diagnosis, with attempts to hide with baggy clothing. There tends to be extreme denial and minimizing

**Other Signs and Symptoms**

*Anorexia*

Hypothermia

Lanugo
Dependent Edema

Hypotension

Loss of Hair

Dry Skin

Cold Extremities

Amenorrhea

Bulimia

Enlarged parotid glands

Hypokalemia

Calluses on back of hands from purging

Heartburn, signs and symptoms of reflux

<table>
<thead>
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<th>Compare and Contrast</th>
<th>Anorexia</th>
<th>Bulimia</th>
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<tbody>
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<td><strong>History of obesity</strong></td>
<td>Uncommon</td>
<td>Common</td>
</tr>
<tr>
<td><strong>Exercise</strong></td>
<td>Excessive</td>
<td>Wide Range</td>
</tr>
<tr>
<td><strong>Social activity</strong></td>
<td>Low</td>
<td>Normal</td>
</tr>
<tr>
<td><strong>Amenorrhea</strong></td>
<td>Majority</td>
<td>About 40%</td>
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<td><strong>Hunger</strong></td>
<td>Deny</td>
<td>Admits</td>
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<tr>
<td>Malnourished</td>
<td>Yes</td>
<td>Yes</td>
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<td>--------------</td>
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<tr>
<td>Body Image</td>
<td>Distortion</td>
<td>Dissatisfaction</td>
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**Behavioral Signs and Symptoms**

- Fear of eating in front of others is magnified by inappropriate sense that all attention is on them, as they engage in a hated and feared task

- As the disorder progresses, the patient resents any comments or efforts to encourage increased intake

**Adolescents**

- Teens who rotate between divorced parent’s homes may say they ate at the other house, or with a friend, etc. etc. to avoid the pressure to eat

- Eating at school and in restaurants becomes a perceived insurmountable task. It becomes overwhelming to look at a menu and make decisions to order food with the absolute least calories without being detected

- The teen becomes more reclusive

**Disordered eating at table**

- Feared foods: often the person claims to be vegan, but this is often a disguise for avoiding feared foods such as meat and dairy products

- Carbohydrates/starches very often are feared due to caloric content
• Absence of fat in the diet usually pronounced

• Part of therapy is to challenge to eat feared foods, starting with the least feared foods

• Condiment use and taste tampering: Excessive condiment use and even mixing foods that taste terrible in combination, spraying with perfume are efforts to control the actual hunger and fear of overeating, by making the food extremely unappetizing

• Condensing: attempting to negotiate meal plan by eating foods such as cottage cheese which can be “claimed” as a protein and a fat.

• Hiding: into pockets, under the plate, into empty milk carton, etc.

• Tiny bites: this is one strategy believed by many teens that each bite can be digested and burned off one at a time, if eaten slowly enough; the net result will be no caloric intake gain. Long periods of time are spent cutting the food into miniscule pieces.

**Nursing Diagnoses**

These diagnoses are often part of a constellation of medical and other psychiatric problems associated with the eating disorder (ATI, 2006)

• Anxiety

• Alteration in nutrition: Less/more than required

• Body image disturbance

• Alteration in thought process

• Impaired social interaction

• Risk of harm to self

• Powerlessness
• Self-Esteem deficit
• Ineffective individual coping
• Risk for (cardiac output, respiratory pattern problems, fluid volume deficit, injury, fall risk, constipation, etc.)

**Goals and Outcomes**

• Hemodynamic Stability
• Weight gain: controlled, usually 1-3 lbs/week
• Relapse prevention
• Less cognitive distortions
• Improved family interactions and communication
• Physiological Recovery

**Triggering and Sustaining Factors**

A variety of biological, environmental, and psychosocial, psychological, and cultural factors are associated with the development of an eating disorder. The exact nature of these interactive processes is not well understood.

• These factors are involved with the regulation and control of food intake and reflect a combination of genetic, neurochemical, developmental, psychological, personality, social, cultural, and familial factors.

**Triggering Factors**

*Cultural values* (thinness, glorification of youth)

These may be the primary or at least most formidable determinants of these disorders. Dieting behavior and the drive toward thinness are common in industrialized countries throughout the world where eating disorders are most prevalent. It may be difficult to identify the severity of an eating disorder in this context.
Dieting

Often when initial weight loss is achieved, positive feedback and reinforcement by peers leads to continuing dieting. At some point, not clearly understood, the dieting becomes extreme and altered thought patterns about body image begin.

Family history and dynamics

- Family dynamics that discourage autonomy/individuation
- Feeding and Dietary Patterns of Families Parents who model poor nutritional habits, disapproval of overweight people and frequently engage in dieting place their children at risk for developing and eating disorder.

Using food as emotional comfort both for themselves and their children are not teaching their children about the appropriate role of food as nourishment.

Fashion and Entertainment industry

- Establishes standards of perfection and severely underweight skeletal fashion models
- Hollywood underweight female icons setting trends

Neurobiology and inheritance factors:

emerging evidence suggests that eating disorders are familial with strong biological correlates. The risk for eating disorders is highest in first-degree female relatives of people with eating disorders.

- The prevalence of eating disorders is 7-12 times higher among relatives. Through genetic research, heritability estimates findings indicate that approximately 55%-80% of variance of eating disorders between identical twins and fraternal twins can be traced to genetic factors.
• Biological factors may include the appetite regulation center of the hypothalamus, which controls specific neurochemical mechanisms for feeding and satiety. One hypothesis is that the neurotransmitters that control feeding and satiety are dysregulated in people with eating disorders. Of course it is possible that these disturbances are consequences of dietary abnormalities or other premorbid traits that contribute to vulnerability to develop an eating disorder.

• Studies have shown that serotonin is associated with reduced satiety, increased food intake, and dysphoric mood.

• It seems that serotonin plays a role in thoughts that are preoccupations with weight and shape and that selective serotonin reuptake inhibitors sometimes can help reduce the obsessive thoughts, and modulate mood better. (Kaye & Strober)

• When dietary tryptophan is reduced, (an essential amino acid for the formation of serotonin in the brain) people with bulimia show a marked increase in disordered eating behavior and mood changes, much like those in depressive disorders: irritability, mood lability, and fatigue, all signs and symptoms of a disturbance in serotonin activity.

• Co morbidities frequently seen are depression, obsessive-compulsive disorder, and substance abuse: all of these are disorders that may have heritability

**Developmental/Psychosocial Factors**

Most patients with eating disorders have problems with rigidity, ritualism, and meticulous behavior, often originating in childhood. Obsessive need for perfectionism, exactness, and symmetry with risk avoidance, self restraint and impulse control provide the context for eating disorder behavior. These disturbances may be the result of dysfunctional parenting from parents that have these same disturbances.

• A heavy value and reward for practicing these behaviors by parents reinforces the development of them.
• History of childhood sexual abuse increases risk

*Environmental/cultural/psychosocial*

• A culture which overemphasizes athletics, rewards thinness, and expresses disapproval of overweight people predisposes a teen to become obsessed with achieving perceived perfection by denying themselves food.

• In our culture, thinness is highly valued, culturally rewarded, and associated with achievement.

• The contemporary American ideal woman is lean, strong, graceful, and feminine. This places demands on women to focus on and control their bodies through rigorous self discipline and exercise, dieting and obsessive concern about weight and body image.

• Activities and professions which place a heavy emphasis on weight and size also predispose one to develop an eating disorder. Examples are ballet dancers, models, actors, athletes, fashion retailers, flight attendants, all professions that attract people who may measure their self esteem, self worth, and attractiveness by their body parameters, rather than by personal satisfaction.

• In high school teens, wrestling, track and field, and running are becoming predisposing factors. Athletic coaches who are themselves driven by the need for perfection may be only too willing to deny or overlook serious eating disorder behaviors engaged in by their students (triggering and sustaining) (ANRED, Gurze books)

*Sustaining Factors*

*Cultural values*

Reinforcement for continuing weight loss by cultural cues

*Sense of power and control*

Often the patient, especially adolescent, discovers that they can use refusal to eat as a method of power and control, in situations where they feel they have none.
“Pro-ANA” sub-culture

- Pro ANA sites are those who promote eating disorder lifestyles. There are many eating disorder sufferers who perceive the issue as a “lifestyle choice” and they connect electronically and form a group identity.

- There are symbolic fashion and jewelry icons worn to identify themselves as a member to others who recognize these signals. One symbol is a red jelly bracelet to secretly identify others who are pro ANA.

- The “pro-ana” internet sites offer understanding and encouragement to become “better” at the eating disorder. This subculture of pathos offers a sense of “being understood” and also a source of yet more strategies to lose weight by eating certain combinations and amounts of foods that may increase metabolism. The “tricks of the trade”, such as hydroloading, tampering with the taste of food, and methods to disguise eating disorder behavior from others are learned. (ANRED)

- Eating disorders are embraced as an important part of identity, and this subculture is a place to read and exchange stories with people they can relate to. It is a place to convince themselves what they are doing is okay, and have others validate it for them.

- They want to be "triggered" (given incentive to stay in their disordered patterns, or given reasons they feel they can use to justify hating themselves).

Sites that promote or encourage Eating Disorders as a "lifestyle choice" are dangerous for a number of reasons:

- People with Eating Disorders are often in denial about how serious their eating disorder is... or they may feel they know how to "control it" so they don't ever get too sick.

- Staying in an environment that helps them to continue to kid themselves can be a dangerous game to play.

- Staying in an environment that helps them justify their behaviors as "normal" or "okay" can be a deadly game to play.
• People who suffer with Eating Disorders are often seeking acceptance from those around them. If the way to get accepted on one of these sites is to be "part of the group", they join the group mentality of trying to lose more weight, or be "the best" at the behaviors.

• People who are suffering with Eating Disorders often have a very low self-esteem. To be surrounded by other people touting how their behaviors make them feel great may help them to justify to themselves that restricting, purging and using other dangerous methods is a good way to feel better.

• People with an Eating Disorders often feel neglected, or like they need attention. They can feel unheard or invisible (and sometimes in real-time life they want to have their emotions be invisible). If they are competing for attention in a negative environment, it can lead to negative attention seeking -- negative behaviors -- competition to be the thinnest or the sickest to get that negative attention.

• The nature of Eating Disorder often lends itself to deception -- lying about eating and hiding the behaviors. The “pro-ana” social media is used as a source to find and exchange "tips" on how to hide their behaviors

• Being on a site that encourages a sufferer to continue to do so is feeding directly into the illness.

• People with Eating Disorders often use it as a coping mechanism. If they are not challenged to find better ways to cope, or encouraged to use healthier coping skills, they can continue to justify their negative patterns as okay.

• A sufferer can feel like their emotions are insignificant. If they are encouraged to talk about nothing except weight and food and behaviors, there is no incentive for them to address or work on healing from any of the underlying issues and emotions.

• In other words, these negative types of websites encourage them to stay immersed in their behaviors and far away from their feelings.
• People suffering with an Eating Disorder often isolate themselves. Staying online surrounded by people just as sick as the member, encourages them to stay sick and discourages work on recovery, becoming another way to isolate.

**Impact of Eating Disorders on Adolescent Development**

*Early Childhood Development*

During the age of 6 months to 3 years, there should be a period of separation-individuation development. Infants/toddlers begin to develop autonomy and expression of individuality. The balance of separation and dependence between child and mother needs to develop.

If the mother cannot respond to these needs appropriately, this developmental task may be arrested and potentially become a precursor for later onset of eating disorder.

Feeding on demand may be a preventive measure as a child can develop sensitivity to hunger cues.

If parents use food as a reward, this can lead to problems distinguishing between physiological and psychological hunger.

A child can learn that refusing to eat can be a very powerful means to control.

**Normal Adolescent Developmental Tasks**

• Self identity

• Individuation

• Independence/ Autonomy

• Gender/sexual identity

• Role development

• Developmental transitions are normative changes associated with growth

  Adolescence is a transition that can precipitate threats to self identity. It is a time of upheaval, change, anxiety and insecurity. Changes in body, shape and appearance threaten a person’s self perception.
• Adolescents are preoccupied with their bodies because of rapid changes in size, shape, and functioning. Response to bodily changes is intense and can lead to over concern with body image. There is ambivalence and fear of independence.

• The normal developmental tasks of adolescence even in the best of environments and family health are negotiated with great difficulty as youths begin to move away from the security of childhood, and become more autonomous and responsible for self.

• This requires successful formation of one’s identity, individuation from others, and new role developments.
  
    (Stuart, 2005)

• Eating disorders can interfere with these developmental skills, as the developing teen becomes more entrenched in an eating disorder, dependence on others grows

• Issues of gender, sexual identity, and interdependence vs. dependence are involved in healthy adolescent development

• Teens need healthy social skills and interactions with peers to develop a healthy ego identity.

    Eating disorders often lead to social isolation and detachment, which interferes with these tasks.

    (Evans, et al, 2005)

• Eating disorders primarily affect women and usually begin around the time of puberty

• Increasing prevalence emerging in males due to cultural pressures to be muscular/trim/athletic
**Eating Disorders in Males**

- Frequently there are relational issues between son and father
- Dysfunctional internalizations on what it means to be a man
- Focus often is on leanness, musculature
- Tends to be hidden longer in males because all of the media attention/cultural focus has made it seem like a “girl’s problem”

**Complications of Eating Disorders**

The physiological complications of eating disorders are of great concern. Many can be irreversible and this is devastating in the child or adolescent patient. It can be said that no organs are spared, though there are some differences based on primary type of eating disorder. This section will outline the most common complications from head to toe.

**Starting at the Head:**

- Regulators in the brain for temperature regulation, endocrine function, appetite, sleep and mood regulation are all impacted by malnutrition. This leads to a hypo metabolic state which involves bradycardia and hypothermia and a generalized slowing down of multiple body processes, involving constipation, gastro paresis, cognitive sluggishness etc. Dizziness and faintness are risks. Hypoglycemia and ketosis from digestion of fat stores can cause further metabolic crisis states.

- Altered hunger and satiety cues: Restrictive eating patterns interfere with physiological cues because hunger cues have been suppressed
Vitamin deficiencies can affect the sensory organs and neurological function. The eyes can become sunken with dehydration and severely low body fat. Immunodeficiencies result in pneumonia and other serious infections which may be fatal.

Hair becomes dry and brittle and falls out. The facial contour can become skeletal with protruding facial bones. Lanugo develops as a compensatory mechanism for body heat loss. Skin becomes pale and dry.

In bingers: tooth enamel may become eroded (permanent) leading to abscesses and loss of teeth.

The parotid glands become enlarged with frequent binging and a “chipmunk cheek” appearance is telltale.

**Musculoskeletal**

Muscle wasting causes cachexia and extreme fatigue. Muscle cramps and weakness caused by electrolyte disturbances.

Osteoporosis results from the loss of estrogen due to the endocrine dysfunction, which causes amenorrhea. Recall that estrogen is necessary for laying down of bone mass. Estrogen deficits lead to infertility, and risk of cardiovascular disease and significant osteopenia leading to osteoporosis, just like a post menopausal woman.

Strenuous exercise along with malnutrition significantly accelerates loss of bone density. Supplements do not help due to estrogen depletion.
• Estrogen supplements without weight gain are ineffective to stop bone loss or correct low bone mineral density. Infertility often becomes irreversible if amenorrhea is chronic.

• A 20 year old can have the skeleton of a 70 year old, as laying down of bone mass cannot be “caught up” later. It is irreversible. This leads to stress fractures and spinal problems.

• Recall that calcitonin is involved in calcium absorption and endocrine disturbance from malnutrition may cause deficiency. Calcium supplements cannot replace lost bone mass. Low fat diets also impair vitamin D absorption, a precursor for calcium absorption.

  *Cardiovascular*

• The heart can be affected in many ways: actual atrophy of the myocardium causes reduced cardiac output creating a risk for CHF and chronic heart disease, especially those who engage in excessive exercise.

• B/P 80/40 common-less than 70/40 is of concern

• Bradycardia – concern if less than 30

• Concern if heart rate increases => 100 may indicate refeeding syndrome

• Low O2 saturation, SOB, edema-may quickly decompensate

• A weakened myocardium also predisposes the person to CHF with rehydration and refeeding, as fluid retention is frequent during early refeeding stages of recovery, due to low serum proteins and other altered fluid regulatory processes.

• Pericarditis from frequent purging is possible, though the cause is not well established.
• The most lethal risk is that of cardiac arrhythmias due to potassium and other electrolyte disturbances. Those who hydro load (drink large amounts of water in a short period of time) and engage in strenuous exercise are particularly at risk. Distance runners mistakenly believe if they drink large quantities of water, they will be safe to run, but the effect is the same as hyponatremia, due to dilution, and places them at risk of arrhythmia while running.

• Anemia from iron deficiency can further impact the heart. It is even possible to develop irreversible bone marrow fibrosis

*Digestive System*

• Purging can lead to development of esophageal tears and ruptures, which could cause a fatal hemorrhage.

• GERD is very common in bulimia nervosa with purging. Some suffer with involuntary vomiting due to the damaged gastric valves and gag reflex, as well as reflux.

• Gastroparesis may develop due to starvation and chronic hypometabolic states. In binge eating patterns, there can be a stretched gastrum from binging huge amounts of food, leading to significant gastric emptying problems

• Pancreatitis

• Liver function can become impaired from catabolism, auto digestion of tissues to provide core energy needs for survival
• High cholesterol may be due to liver catabolism and fatty acid deficiency in the diet, as fats are required to metabolize cholesterol. How paradoxical in those who believe they are at optimum fitness with low fat diets and marathon running.

• Hypomotility of the intestines can result from starvation, chronic laxative abuse and constipation can be significant, some even develop bowel obstructions.

• Malabsorption problems can sometimes also lead to diarrhea

Genitourinary

• Renal function can be impaired from several underlying causes: chronic dehydration, abuse of diuretics, low carb intake which can stress the kidney as protein and stored fat are catabolized and byproducts stress the filtration system. Runners are particularly susceptible.

(American Psychiatric Association, Eating disorders review)

• Incontinence of bowel and bladder may be the result of lower spinal fractures with damage to the caudal equina for example

• In malnourished males, there can be decreased testicular function from decreased testosterone

Metabolic

Diabetics: Disordered eating in both main types of eating disorders can be deadly. Some patients with insulin dependent diabetes engaged in deliberate manipulation of blood glucose and insulin to prevent calories being turned into body mass. This is sometimes referred to (unofficially) as Diabulimia
**Refeeding Concerns**

Refeeding must be done stepwise and with very gradual increases in calorie intake. A very careful diet history must be taken to in order to establish the patient’s baseline intake and build slowly from there. The malnourished body has compensated by adaptation in several body systems. There must be gradual introduction of nutrients to facilitate safe restorative weight gain. If refeeding is too rapid, a dangerous metabolic syndrome known as Refeeding Syndrome can develop. This is due to rapid shifts of ions and fluids as follows.

- Magnesium and Phosphorous are of most concern as imbalances of these electrolytes can be fatal. Multi-organ failure is possible. A review of the role of phosphate in metabolism and the extreme shifts in fluids and electrolytes that can occur during refeeding follows:

  **Phosphate:**

  - Phosphate is involved in virtually every intracellular reaction; it is the body’s source of chemical energy.

  - Every metabolic action in the body requires chemical energy – adenosine triphosphate (ATP). The high energy bonds in ATP are derived from phosphate. This is essential for muscle contractility, neuronal transmission and electrolyte transport.

  - Phosphate is a key building block for many essential intracellular compounds – nucleic acids, phospholipids, enzymes, nucleoproteins.

  - Phosphate is the main source of intracellular buffer in the body, and is particularly important for buffering volatile acid (CO2).
• Refeeding syndrome occurs when previously malnourished patients are fed with high carbohydrate loads; the result is a rapid fall in phosphate, magnesium and potassium, along with an increasing extracellular fluid volume, leading to a variety of complications.

• Patients who are malnourished develop a total body depletion of phosphorous; serum phosphorous levels are then maintained by redistribution from the intracellular space. The body uses endogenous fuel stores as its main source of energy. Fat and protein (from muscle) are metabolized.

• The delivery of glucose, either enterally or parenterally, as part of a feeding strategy, can cause a huge increase in the circulating insulin level. The patient struggles to cope with converting to exogenous fuel sources. There is rapid uptake of glucose, potassium, phosphate and magnesium into cells.

• The serum concentration of these agents falls dramatically. In addition, for an unexplained reason, the body swiftly begins to retain fluid, and the extracellular space expands.

• The dramatic reduction in serum electrolytes and fluid retention leads to a number of systemic pathologies. There is an increase in cardiac workload, with increased stroke work, heart rate and oxygen consumption.

• This sudden increase in demand for nutrients and oxygen may outstrip supply. Moreover, in patients with cardiovascular disease, the sudden increase in cardiac work and circulating fluid can precipitate acute heart failure.
The sudden administration of carbohydrates exerts a considerable strain on the respiratory system, whose musculature may well be atrophied due to starvation.

The gut atrophies with starvation and the production of digestive enzymes diminishes.

With return of enteral nutrition, the gut may be initially intolerant, requiring time to adapt, and many patients complain of nausea and diarrhea.

The result of sudden massive reduction in phosphorous levels can also lead to arrhythmias, rhabdomyolysis, seizures, coma, red cell and leukocyte dysfunction.

The most effective way to treat refeeding is to be aware of it. One should start feeds slowly and monitor and if necessary, aggressively supplement magnesium, phosphate and potassium.

**Treatment Modalities**

There are many barriers to treatment including access and resistance factors. Commercial insurance tends to be miserly for all forms of psychiatric illness, and this is particularly grim when eating disorders lead to high morbidity and mortality rates. Barriers to treatment include:

- Outpatient, Intensive Outpatient, and Partial Hospitalization programs typically at a minimum are over one hundred dollars per hour.

- Medicaid does not cover treatment for a primary diagnosis of eating disorders

- Those that reside in areas remote from treatment centers have been known to lodge in hotels and take extended leaves of absence from work.
• To complicate matters further, research indicates that earliest intervention in teens, often at a higher level of care such as inpatient, before full blown manifestation of an eating disorder leads to the best chance of relapse prevention and long term positive outcomes, but criteria for admission to inpatient units is not present until later in the illness trajectory and therefore coverage is denied by insurance companies.

• Insurance companies follow typical treatment courses for adults, because longitudinal studies on treatment modalities and levels of care with highest efficacy in adolescence have minimally been researched.

• Treatment is not likely to be effective without motivation. Motivation is not likely when denial or minimization of the severity of illness is pronounced. Parents themselves may be in denial and minimize the severity of illness, or overestimate their ability to treat the problem on their own.

• One way to help overcome resistance to the idea of treatment is to focus on the medical problems as a psychologically non-threatening way to introduce the need for intervention. (Evans, et al)

**Individual Therapy**

• Individual therapy on an outpatient basis may be the only option for those who reside in areas where other types of treatment are not available, such as rural or small towns.

• Treatment options in these areas are variable and depend upon the varying degrees of interest and expertise of therapists in treating adolescents with eating disorders. Most often individual therapy providers limit their practice to adults.
• At times it falls to a primary care physician who may not feel comfortable treating this complex problem in teens

• It is best if an adolescent can be treated in their local community so they may stay with their family, maintain school progress and important peer relationships

**Family Therapy**

• Family is important when the patient is a child or adolescent. Counseling and therapy examine ways in which the family may be a factor in the development or perpetuation of the illness and explores ways the family can help to resolve conditions that may contribute to it.

• The therapist targets family processes, including inappropriate alliances within the family, communication problems, conflict, or avoidance of conflict, and suppression of individuation and separation among family members, particularly the adolescent. (Gurze)

• The family may discover that the eating disorder is helping to maintain dysfunctional adaptations by diverting attention away from family difficulties.

• When these patterns are addressed, the child or adolescent potentially can be helped to no longer feel pressure to save the family from facing its problems by using an eating disorder to avoid age-appropriate developmental tasks. (Gurze)
Cognitive Behavioral Therapy

- Cognitive Behavioral Therapy (CBT) is an evidence based approach to help people challenge faulty assumptions and distorted thoughts and beliefs by exposing the lack of evidence in reality that support those thoughts.

- Correcting thoughts leads to changes in behavior, because thoughts are what drive behavior.

- Making and practicing behavioral changes influences not only behavior but mood as the distortions that were fueling anxiety and depression are corrected.

- Challenging patients regarding false beliefs begins with the areas that are the least feared. It may start by a challenge to eat a feared food. Later, a challenge about wearing certain articles of clothing may be tried.

- CBT therefore is highly individualized and matched to the unique struggles the patient is having.

- It is believed that CBT meshes well with the particular cognitive issues of adolescence. Three cognitive skills of adolescence that are especially relevant to this therapy are abstraction, consequential thinking, and hypothetical reasoning.

Maudsley Method: Adolescent Specific

- Proven by research to be the most effective treatment for eating disorders in adolescents.

- A unique form of family treatment that focuses on family management of the eating disorder rather than on presumed pathological features of the patient or family.
• Treatment is highly focused on behavioral change around eating and weight gain, rather than on the causes of the disorder. Therapists emphasize the importance of changing eating patterns and increasing weight as the first step in recovery.

• Parents are central to creating support and an environment that increases weight as the first step in recovery.

• They are empowered with the support of a treatment team to take up the task of re-feeding their child. They prepare all meals and monitor their child’s eating and exercise behavior.

• Frequently this means keeping the child home from school and taking time off from work for a few weeks.

• The treatment team helps the parents stay on task and avoid distractions while providing lots of encouragement and support.

• The therapist consults with the parents and the teen about how to improve their strategies while providing strong and consistent encouragement in any areas of success.

• Parents and the family as a whole are viewed in a positive light regarding their intentions and their attempts to find solutions to the predicament they face as a result of their child having an eating disorder.

• By not blaming the parents or seeing them as a cause of an eating disorder, the parents are relieved of guilt and defensiveness that hinders their ability to take definitive action to help their child.
• The illness is externalized as a sort of intruder to the family that is causing problems and groundwork is laid for both parents and teen to take action against a common adversary rather than fighting one another.

• It should be noted that CBT approaches combined with the Maudsley model are particularly effective and parents can learn to reinforce challenging destructive and distorted thoughts and negotiate new patterns of relationships.

• The second phase of treatment begins when the teen is approaching normal weight and the parents slowly begin to turn over control of eating and related behaviors back to their child.

• The therapist helps the parents identify when they feel ready and safe to begin this process and reviews strategies to employ during this transition.

• Toward the end of this phase, the treatment turns to the relationship between eating and adolescent issues, such as eating at social events and at school.

• Once the teen has achieved full control of eating without daily struggles, the third phase of recovery begins.

• The aim of the third phase is to help parents and the teen make sure that all hurdles of the eating disorder have been overcome, such as falling behind in school, social isolation, or excessive dependency on parents.

• Once these issues are addressed, treatment can be terminated (Evans, et al 2005).
**Nursing Interventions**

Eating Disorders are the psychiatric disorders that uniquely require holistic approach by nurse that encompasses physiological expertise

**Nursing Interventions: Physiological**

Urgent: correct nutritional and electrolyte imbalance which can result in death

Attempt to obtain accurate dietary pattern, as a baseline for dietician to develop a step wise progressive increase in diet

Frequent thorough head to toe physical assessments to detect developing complications early

Enteral nutrition for acute failure to eat/gain weight

An interesting phenomenon that develops is that the teen actually loses the ability to interpret their body’s natural hunger, satiety, thirst, and fatigue cues through long term overriding of these cues. An effective strategy is to have an individualized meal plan developed with a dietician that considers preferred foods as much as possible. This meal plan is structured as a method to “eat by the clock” and relieves the patient of trying to interpret or override these cues, because the meal plan is designed to prevent any lengthy lapse of time between meals that would lead to hunger pangs. Usually it is 3 meals, and 3 snacks.

(Stichart,, K. Rogers Memorial Hospital)

**Nursing Interventions: Psychosocial**

Care planning requires the nurse to recognize that the dynamic focus of the patient with anorexia is on CONTROL

- A first step in creation of a therapeutic alliance between nurse and a patient with an eating disorder is to formulate a nurse-patient contract.
- This facilitates engagement and willingness to adhere to the treatment plan because a contract is a form of agreement by the patient and helps them maintain a feeling of control
- Mutually developed goals including the use of behavioral contracts
- Assist patient to adopt realistic view of body
- Self esteem building
- Assist to develop coping strategies, challenge distorted thoughts, and self expression both verbally and nonverbally
- Medication teaching prn

(Mental health nursing, review model, ATI, 2006)

**Nursing interventions: Behavioral**

- Direct supervision of eating meals and behaviors with food such as excessive condiment use and deliberate tampering to make food taste offensive, hiding food, condensing, over/under-serving, hoarding
- Consistent expectations among staff essential. It is best to have only the dietitian and attending physician take control of the meal plan. This can prevent staff-splitting and the arduous meal negotiations the patient is likely to attempt due to desperation to avoid eating. All contracted expectations must be enforced 100% of the time, exactly as prescribed. This actually can build trust and security as the patient knows what to expect.
- Post prandial bathroom restriction and supervision (purging)
- Control access to drinking water
- Blind weights in gowns
- If indicated, activity restriction to conserve energy
**Pharmacological Interventions**

Psychotropic medication is only effective after weight restoration as neurotransmitter depletion may be a contributing factor. Selective Serotonin Reuptake Inhibitors (SSRI’s) work best when given after some weight restoration to reduce relapse and obsessionality SSRI’s are more effective with Bulimia Nervosa to reduce impulsivity/binge eating as serotonin is related to feeding, mood, obsessions and impulse regulation.

Vitamin supplementation is not particularly helpful in acute starvation as absorption is poor. Multivitamins along with refeeding is frequently more effective.

Obsessive Compulsive Disorder which is often a co morbid problem, and is an anxiety spectrum disorder, may respond to anxiolytics, thereby helping the person deal with the eating disorder better. Sometimes meal time anxiety is so severe that the individual cannot tolerate the situation, and low dose benzodiazepine before each meal may be needed initially.

There is increasing understanding of the similarity of the nature of addictive disorders and the binge eating characteristic of bulimia. Medications that inhibit the reward system in the brain are increasingly used, such as naltrexone.
Recovery Focused Organizations

National Eating Disorders Association (NEDA)

Something Fishy

Anorexia Nervosa & Related Eating Disorders (ANRED)

National Association of Anorexia and Associated Disorders (ANAD)

Websites: Recovery Focused

http://www.edap.org/  
(NEDA)

http://www.gurze.com/  
(Gurze books, info)

http://www.something-fishy.org/  
(Something fishy)

http://www.anred.com/  
(Anorexia Nervosa and Related Eating Disorders)

http://www.anad.org/site/anadweb/  
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