

Eating Disorders

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The Problem

- Current US culture is obsessed with weight loss, both appropriately and inappropriately
- Since the late 1960's, society has equated female beauty with thinness
- Models and actors display unhealthy and unattainable levels of thinness
- Women's magazines feature stories about weight management, dieting, exercise
- All adds up to sending an unavoidable message to our adolescent women

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The Magnitude of the Problem

The 2001 Youth Risk Behavior Survey showed:

- 35% of adolescent girls believed they were overweight
- 62% were attempting to lose weight
- In the last 30 days, 8% had tried vomiting and had taken laxatives to help control their weight
- Other studies have shown that by the age of 18, more than 50% of normal weight women consider themselves to be overweight

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The Secret Illness

- Trends over time are difficult to assess for many reasons
 - Changes in the diagnostic criteria
 - Diagnosis relies on self report in a disease characterized by secrecy and denial
- Increasing awareness of "famous" eating disorder patients has helped shed light on the illness:
Karen Carpenter, Cathy Rigby, Nadia Comaneci, Princess Diana

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Spectrum of Eating Disorders

- Anorexia nervosa
- Bulimia nervosa
- Eating disorder NOS
- Female athlete triad syndrome

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Diagnosis: Anorexia Nervosa

- Refusal to maintain weight within a normal range for height and age (more than 15% below ideal body weight)
- Fear of weight gain
- Severe body image disturbance in which body image is the predominant measure of self worth, with denial of the seriousness of the illness
- Loss of periods for three cycles

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Diagnosis: Anorexia Nervosa

- Important to realize that adolescents with AN may drop 15% below ideal body weight **without ever losing weight** if they fail to gain appropriate amounts of weight during their prepubertal growth spurt
- Also important to realize menses may disappear even before weight loss is manifested
- Two types: restricting and binge eating/purging

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Diagnosis: Bulimia Nervosa

- Episodes of binge eating with a sense of loss of control
- Binge eating is followed by compensatory behavior of the purging type (self-induced vomiting, laxative abuse, diuretic abuse) or nonpurging type (excessive exercise, fasting, or strict diet)
- Must occur a minimum of two times per week for three months
- Dissatisfaction with body shape and weight

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Compare and Contrast: Anorexia vs Bulimia

Anorexics

- Relentless pursuit of thinness
- Initially experience their eating behavior as a sense of control over their world

Bulimics

- Characterized by a sense of lack of control over the amount being eating or the ability to stop
- More characteristic of addictive thinking

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Diagnosis: ED NOS

- Includes patients with clearly aberrant eating patterns and weight management patterns who do not meet the criteria for AN or BN
- Example is binge eating disorder—characterized by a lack of control over eating behavior with an average of at least two binge eating episodes per week for six months
- Consumption can be massive—documented up to 50,000 calories per episode

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Female Athlete Triad: Disordered Eating

- Patient is watching diet in order to have the body that will perform better for their particular event
- Attempt to lower percent body fat secondary to the misconception that lower percent body fat equals better performance
- Patterns of eating are not unlike anorectics but the motivation is different

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Who is at Risk: Nature

Genetics

- Young women with first degree relatives with EDs have a 6-10 fold increased risk of developing an eating disorder
- Monozygotic twins have a high rate of concordance for eating disorders compared to dizygotic twins
- Family predisposition to affective disorders and alcohol dependence

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Who is at Risk? Nurture

- A history of dieting
- Childhood preoccupation with a thin body and social pressure about weight
- Sports and artistic endeavors in which leanness is emphasized
- Conflicting reports of sexual abuse history

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Who is at Risk? Nurture

Family characteristics

- High parental expectations regarding achievement and appearance (as perceived by the teen)
- Families with difficulty managing conflict or with poor communication styles
- Enmeshment
- Marital tensions

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Does this patient have an eating disorder?

You are seeing Susie for a sports physical. She has no complaints. Susie is a high school junior at a prestigious private school with ivy league aspirations. She has no significant past medical history. Her grade point average is 3.95, she plays varsity field hockey and lacrosse, and is president of her class. She has no complaints.

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Does this patient have an eating disorder?

Review of systems is remarkable only for an absence of periods for the last six months during which time she has been training intensively with a traveling lacrosse team. On examination, she is 5'9" tall, weighs 117 pounds, has a resting heart rate of 45, and a blood pressure of 95/50. The thyroid gland is normal and there are no signs of hyperandrogenism.

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Clinical Manifestations of Eating Disorders

- | | |
|--------------------------|----------------------------|
| Cardiovascular | GI |
| • Decrease pulse and BP | • Constipation |
| • CHF | • Bloody diarrhea |
| • Rhythm disturbances | • GERD |
| • Mitral valve prolapse | • Fatty liver infiltration |
| Dermatologic | • Parotid hypertrophy |
| • Brittle hair and nails | Endocrine |
| • Carotene pigmentation | • Amenorrhea |
| • Hair loss | • Hypothermia |
| • Lanugo | • Low T3 Syndrome |
| | • Osteoporosis |

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Manifestations of Eating Disorders

- | | |
|-----------------------------------|-------------------------|
| Hematologic | Neurologic |
| • Leukopenia | • Cortical atrophy |
| • Anemia | • Myopathy |
| • Impaired cell mediated immunity | • Peripheral neuropathy |
| • Low ESR | • Seizures |

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Laboratory Manifestations

- Most usually NOTHING IS ABNORMAL especially if there is no purging behavior and should not influence diagnosis
- Occasionally one sees:
 - Leukopenia
 - Anemia
 - Euthyroid sick TFTs
 - Elevated LFTs
 - Metabolic alkalosis if patient has purging behaviors

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Diagnosis Rests on History

- Tell me how much you ate yesterday
- Tell me about your relationship with food
- How do you feel about your body?
- What do others tell you about your body?
- What do you think your ideal body weight would be?
- Do you have any rituals when you eat?

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SCOFF QUESTIONNAIRE

- Do you make yourself SICK because you feel uncomfortably full?
- Do you worry you have lost CONTROL over how much you eat?
- Have you recently lost more than ONE stone (14 pounds) in three months?
- Do you believe yourself FAT when others say you are thin?
- Would you say that FOOD dominates your life?

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SCOFF QUESTIONNAIRE

- A yes answer to two or more questions has a high probability of an eating disorder
- Sensitivity ranges between 80-100%
- Specificity is around 85-90%
- Easy to use and remember

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ESP Questionnaire

- Are you satisfied with your eating patterns? (No)
- Do you even eat in secret? (Yes)
- Does your weight affect the way you feel about yourself? (Yes)
- Have any members of your family suffered with an eating disorder? (Yes)
- Do you currently suffer with or have you ever suffered in the past with an eating disorder? (Yes)

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ESP Questionnaire

- Study comparing ESP to Scoff questionnaire
- Found increased sensitivity at 100% but a lower specificity of 71%
- Neither questionnaire has widespread use—both need to be validated in broader populations

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Other Questionnaires

- Anorexia and Related Disorders (ANRED)
 - 33 statements, agree or disagree
 - Way to begin the dialogue about healthy eating
- Eating Attitudes Test (EAT)
 - 26 questions, each scored 0-3 points
 - Score of 20 or more suggests an eating disorder
 - One validation study suggested an accuracy of about 90%

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Is it Bulimia or Anorexia?

- Anorexia is common with a prevalence of 1-2%; bulimia is even more common, affecting up to 2-3% of adult women
- Almost half of patients with anorexia eventually develop bulimic symptoms
- Look on exam for: Russell's sign; enlarged parotid glands; erosion of tooth enamel
- Laboratories are the most useful tool in evaluating for the possibility of bulimia

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Laboratory Abnormalities Seen in Bulimia

	Vomiting	Laxative	Diuretics
Sodium	Variable	Variable	Variable
Potassium	Decreased	Decreased	Decreased
Chloride	Decreased	Variable	Decreased
Bicarbonate	Increased	Variable	Increased
Ph	Increased	Variable	Increased

Look for hypochloremic metabolic alkalosis

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How to Begin Treatment: Outpatient vs Inpatient

- Indications for inpatient treatment
 - Abnormal vital signs (bradycardia, orthostatic hypotension)
 - Weight < 70-75% of ideal body weight
 - Rapid and severe weight loss unresponsive to outpatient therapy
 - Cardiac arrhythmias/prolonged QT

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Abnormal Vital Signs

- Marked bradycardia (rates between 40 and 50 beats per minute) and reduced systolic blood pressure are common energy conserving mechanisms
- Cardiac vagal hyperactivity also contributes to the bradycardia
- Red flag that severe malnourishment is present and should consider hospitalization

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Outpatient Treatment

- Requires an interdisciplinary team approach involving: physician, dietician, and a mental health professional
- Physician's role is to assess and monitor the patient's physical status and body weight while *setting a limit past which the patient will be referred for more intensive and structured treatment*

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Outpatient Treatment

- Goal for outpatient weight gain is .5 to 1 pound per week; inpatient programs aim for 2-3 pound weight gain per week
- In general, participation in athletics is discouraged until the patient achieves her target weight
- Time honored method for calculating ideal body weight: 100 pounds for the first 5 feet; then 5 pounds for every inch over 5 feet
- Target should be 90% of IBW

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Outpatient Treatment

- Caloric intake and meal planning is done by the dietician
- Generally refeeding requires diets of 800-1000 kcal/day initially
- Incremental increases of 200-300 kcals/day as tolerated and as determined by individual weight gain
- As patients near target weight, they often require 3000-3500 kcals/day

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Red Flags in the Patient Encounter

Be aware of attempts to falsify weights

- Refuses to be weighed
- Wearing baggy clothes
- Weighting down clothes (always weigh in gown)
- Reluctance to remove clothes for examination
- Water loading before weigh in (check urine specific gravity if suspicious)

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Outpatient Treatment

- Early in the refeeding process, patient may gain weight despite low caloric intake because of fluid retention and because of low resting metabolic rates
- However, the number of ingested kilocalories required for weight gain rapidly increases as body weight increases—very frustrating for anorexics

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Refeeding Syndrome

- Potentially catastrophic complication that occurs early during the nutritional rehabilitation of ED patients
- Greatest risk is in the first 2-3 weeks
- Manifested by cardiovascular collapse generally due to hypophosphatemia
- Two primary biochemical problems are: impaired cellular energy stores due to decreased ATP and tissue hypoxia due to decreased 2,3 DPG

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Refeeding Syndrome

- Carefully monitor serum electrolyte levels, especially the phosphorus level, during the early phases of weight restoration
- Also watch for signs of CHF—the decrease in ventricular mass can be overwhelmed by the sudden ingestion of large amounts of nutrients

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Complications: Amenorrhea

- Caused by low levels of FSH and LH despite low estrogen levels
- Withdrawal bleeding does not occur in these patients when given a progesterone challenge
- Therapy is restoration of weight
- Often PRECEDES weight loss

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Complications: Return of Menses

- Most patients will recover menses within 6 months of reaching 90% of their ideal body weight
- Serum estradiol levels of > 110pmol/L are a good predictor of return of menses
- Weight 5 pounds above the level at which menses are lost is also a good predictor
- May persist if emotional conflicts remain

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Complications: Osteoporosis

- A diagnosis of AN is associated with an increased fracture risk of 2.9 fold
- The marked degree of osteopenia is clearly based on several factors other than estrogen deficiency
- This became clear after trials of estrogen replacement therapy failed to improve BMD

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Complications: Osteoporosis

- The severity of the osteopenia depends on the lean body mass, not the duration of the estrogen deficiency
- Both hypercortisolemia and reduced levels of insulin-like growth factor have been reported
- Therefore there is no clear role for estrogen supplementation

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Complications: Osteoporosis

- Calcium and vitamin D supplementation should be prescribed
- No clear role for bisphosphonates
- Monitor with bone mineral density at the time of diagnosis and every 1-2 years thereafter

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Long Term Prognosis

- Important to realize that AN is a protracted disease; a recent study showed 50% eventual recovery, 21% with intermediate outcome, and 26% with a poor outcome
- Overall mortality rate of 9.8%--mental health condition with the highest mortality rate
- Bulimia by itself has a much better outcome

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Long Term Prognosis

- Often accompanied by comorbid psychiatric conditions that may accompany an ED
- Anorexics: higher than population incidence of affective disorders, anxiety disorders, OCD, and personality disorders
- Bulimics: substance abuse and other risk taking behaviors

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Longterm Prognosis

- Psychotherapy critical—individual and group psychotherapy are both utilized
- Family counseling especially important for teenagers between 14 and 18 and still living at home
- Uncontrolled studies suggest that fluoxetine may be useful in preventing relapse; it is NOT useful in hastening weight restoration

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Conclusions

- Eating disorders are common
- Associated with substantial morbidity and in the case of AN, substantial mortality
- Commonly presents in the medical setting with complaints such as amenorrhea
- Primary care physicians play an important role both in the diagnosis and longterm management of these conditions

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Dr. Melissa McNeil – Questions & Answers

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