EATING DISORDERS AMONG ADOLESCENTS: JUST DIETING OR SOMETHING MORE?

Sheryl Ryan, MD
Chief, Section of Adolescent Medicine
Department of Pediatrics
Yale School of Medicine

Objectives

- To provide a brief overview of etiology and risk factors for developing eating disorders.
- To learn how to approach and manage weight loss and disordered eating in the primary care setting.
- To understand both out-patient and in-patient strategies to manage the spectrum of eating disorders.

Disclosure

- Speaker's Bureau – Merck Pharmaceuticals


OCTOBER 9, 2006
People
GOING TO EXTREMES
PRESSURE TO BE THIN
• Is the celeb obsession with weight loss out of control?
• Portia de Rossi's anorexia battle • Inside an eating disorder clinic
Keira Knightley
Nicole Richie
Kate Bosworth
STEVE IRWIN
His Widow's Heartache
OLIVIA NEWTON-JOHN
Her Grief Over Missing Boyfriend
LINDSAY LOHAN
Romantic Roller Coaster

Background

- U.S. culture obsessed with appearance, weight loss, dieting
- Media images display models and celebrities with unattainable levels of thinness
- Importance of thinness in our society is an unavoidable message to developing adolescents

- At the same time, percentage of adolescents with obesity has tripled in past two decades

Prevalence of Weight-Related Behaviors

- **Project EAT: Eating among middle school teens**
  - Body dissatisfaction: girls 46%; boys 26%
  - Desire to weigh less: 70%girls, 21% boys
  - Current weight loss attempts: 45% girls, 21% boys
  - Girls – 57% unhealthy methods; 12% extreme
  - Boys – 33% unhealthy; 5% extreme
  - $5^{th}/6^{th}$ grade Girl Scouts: 29% dieting, 8% unhealthy practices

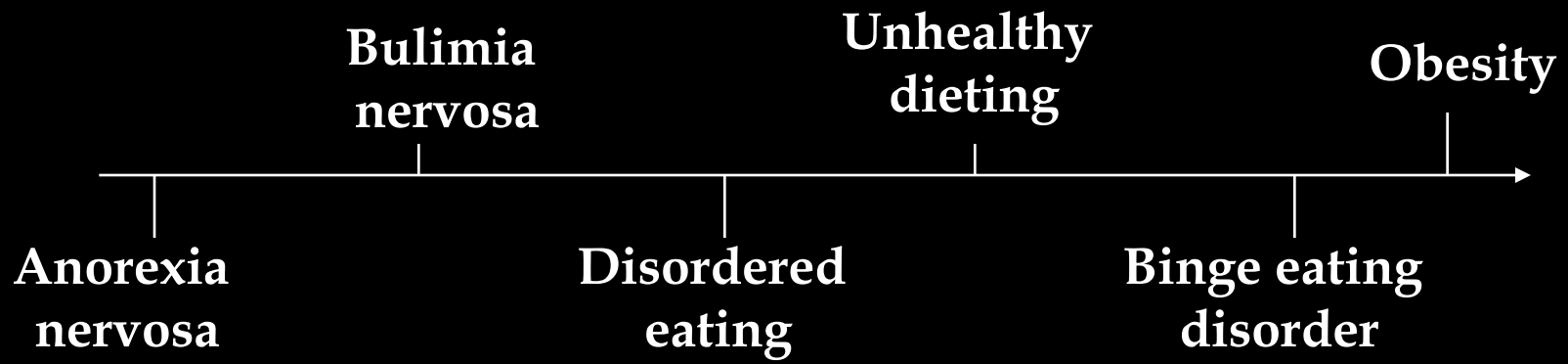
Neumark-Sztainer D et. al. *Arch Ped Adol Med* 156:171, 2002.

Spectrum of Eating Disorders

- Anorexia nervosa
- Bulimia nervosa
- Eating disorder NOS
- Disordered eating

- Binge eating disorder

Spectrum of Weight –Related Disorders



Eating Disorders: Epidemiology

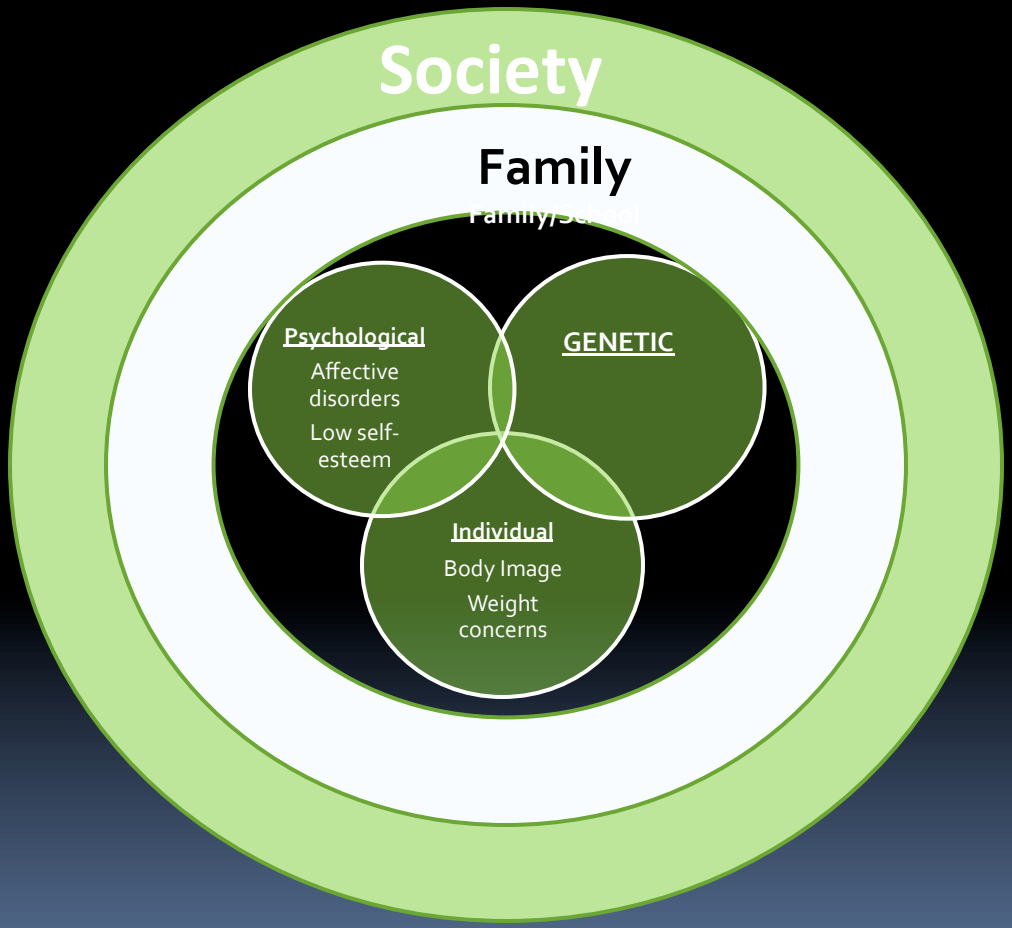
- **Age of onset:** Bimodal 14 and 18 years
- **Sex ratio:** Female to male ratio 10:1
- **Prevalence:**
  - Anorexia nervosa: lifetime - .9% females; .3% males
  - Bulimia nervosa: lifetime prevalence – 1-3% females
  - ED – NOS : lifetime – 3-5% females
  - BED: 3.5% females; 2% males
- **Familial pattern:** More common in sisters and mothers of those with disorder
- **Complications:** Mortality rates between 5 and 15%

- *Disordered eating is third most common chronic illness among adolescent girls after obesity and asthma*

Eating Disorders: Etiology

- Thought of as a biopsychosocial disorder.
- Vulnerabilities in three spheres:
  - Individual/personal
  - Family
  - Socio- environmental

Etiology


Society
Family
Psychological
Affective disorders
Low self-esteem
GENETIC
Individual
Body Image
Weight concerns

Etiology

- Longitudinal studies looking at eating behaviors in early childhood.
  - History of food refusal in early childhood.
    - Higher incidence of eating problems in later childhood
  - "Early childhood feeding problems"
    - Higher incidence of disordered eating 8 -10 year later
  - ? Sets the stage for later problems
- Weight and body image concerns develop prior to puberty
  - Puberty is critical period for development of disordered eating in girls -→precipitant?

Role of PANDAS

- Pediatric Autoimmune Neuropsychiatric Disorder Associated with Streptococcus
- Clinical criteria
  - Presence of OCD or tic disorder
  - Pediatric onset – (3 yrs. – puberty)
  - Episodic course of symptoms
  - Association with streptococcal infection
  - Associated with hyperactivity, choreiform movements
- Described in 1998 by Saved, Leonard, Garvey
- *Svedo, SE. American J of Psychiatry 155:264-271, 1998.

Assessment in the Primary Care Setting

When should you suspect an eating disorder?

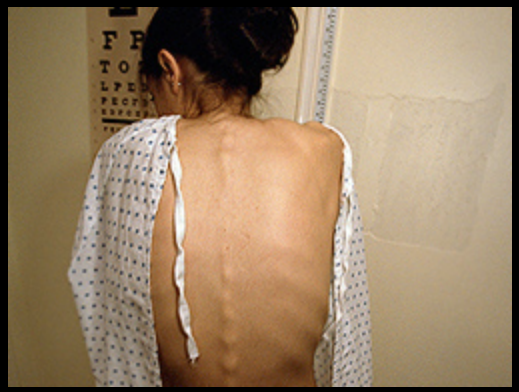
- Unexplained weight loss
  - Any weight loss or failure to gain expected weight in a child is concerning!
- Change in eating patterns
  - Progressive change from high caloric density foods to lower caloric; vegetarianism/veganism, desire to "eat healthier"; frank restriction
  - Change in eating behaviors, focus on food, rituals
- Change in activity patterns, exercise
- Lack of concern by teen/child about emaciation

Atypical Presentation in Children and Adolescents

- More often males
- Appears in context of stressful family or life events
- More likely to have co-morbid psychiatric diagnoses
  - Anxiety, OCD, depression
- Less likely to have body image disturbances
  - They agree that they are thin
- Weight loss is unexpected: "eating healthy"
  - Leads to confusion about why parents are concerned

Atypical Presentation in Children and Adolescents

- Can often lead to delay in diagnosis
  - Seen as a "passing phase"
- May not have lost amount of weight to meet strict criteria
  - Any weight loss should be concerning given normal expectations for weight gain and growth
  - Interruption of normal pubertal processes may lead to irreversible stunting
  - Changes in brain volumes (MRI); bone accretion



Eating Disorders: Presenting symptoms

- **Physical symptoms reflect degree of malnutrition**
  - **Weight Loss or inability to maintain normal weight**
  - **Amenorrhea - virtually 100%**
  - **Constipation**
  - **Abdominal pain**
  - **Fatigue**
  - **Cold intolerance**
  - **Light-headedness**
  - **Signs of cognitive blunting**

Eating disorders: Presenting Physical Signs

- Cachexia, muscle wasting
- Hypotension, hypothermia, bradycardia
- Acrocyanosis
- Dry skin, or lanugo-type hair
- Edema
- Systolic murmur
- Short stature
- Breast atrophy
- Lack of signs indicating other causes to wt. loss
- Enamel loss and salivary gland enlargement with frequent purging

Eating Disorders: Diagnosis

- Comprehensive history and PE will guide w/u
- Limit laboratory studies on basis of Histoy and PE
- Consider differential diagnoses:
  - Medical Conditions
  - Psychiatric
- Utilize DMS-IV Criteria when appropriate
  - Consider alternate classifications

Differential Diagnoses

- **Medical Conditions**
  - GI - Inflammatory bowel disease, malabsorption
  - Endocrine
    - DM, Addison's, thyroid disease
  - Malignancies
  - CNS lesions
    - tumors, intracranial infections, increased ICP,
  - Miscellaneous - early pregnancy, sarcoidosis, cystic fibrosis
  - Chronic infections (TB, HIV)

- **Psychiatric Disorders**
  - Mood disorders, OCD, Body dysmorphic disorder, Substance use disorders, Psychosis

DSM-IV Criteria in Children?

- To what extent does current system capture the developmental aspects and atypical presentations seen in children and adolescents?
  - Too restrictive
- Is diagnosis of EDNOS useful and does it reflect a partial syndrome that may progress to full-blown AN/BN later?
  - Subthreshold versus truly atypical
- Are there other entities that should be included in classification system for children?

Anorexia Nervosa – DSM-IV

- Refusal to maintain weight within a normal range for ht and age - >85%IBW
- Fear of gaining weight
- Severe body image disturbance
  - Image is main measure of self-worth, denial of seriousness of illness
- Amenorrhea (greater than three cycles

- Two subtypes – restrictive and binge-eating/purging

Anorexia Nervosa: Cardinal Features

- Self-induced weight loss
- Psychological disturbance
  - Distorted body image
  - Fear of obesity
- Secondary physiological abnormalities
  - Result of malnutrition

Bulimia Nervosa: DSM IV Criteria

- Recurrent episodes of binge eating
- Recurrent episodes of compensatory behaviors after binge episodes
- Episodes have occurred at least twice weekly for three months
- Self-evaluation is based on body weight or shape
- Does not occur in presence of AN
  - Purging and non-purging types

Binge Eating Disorder

- Recurrent episodes of binge eating
  - Eating more rapidly than usual
  - Eating until uncomfortably full
  - Eating when not physically hungry
  - Eating alone because of embarrassment
  - Feeling disgusted, depressed, or guilty
- Marked distress during episodes of binges
- Occurs at least twice a week for 6 months
- *No compensatory behaviors after binge*

Great Ormond Street Classification*

- Anorexia nervosa
  - Determined wt. loss, abnormal cognitions of and morbid preoccupation with weight or shape
- Bulimia nervosa
  - Recurrent binges/purges, lack of control, morbid preoccupation with weight or shape
- Food avoidance emotional disorder
- Selective eating disorder
- Functional dysphagia
- Pervasive refusal syndrome

*Nicholls D, Int J Eat Disorders 28:317-324, 2000

Eating Disorders: Diagnosis and Assessment

- Laboratory Assessment
  - CBC and platelets, ESR, BUN, CR, electrolytes, LFTs, Ca, phosphate, Mg, albumin, T4, TSH, ECG
    - Consider bone mineral density if amenorrheic for > 1 year
- Nutritional Assessment -
  - 24 hour recall,
  - %IBW – utilize BMI 50%ile for age (~BMI <16)
  - Recent losses or gains
    - Can determine degree of malnutrition

Eating Disorders: Complications

- Cardiac impairment
  - MVP, QT prolongation, CHF
- Osteoporosis
- Gastrointestinal
  - Some specific to purging, slowed motility, nausea/bloating
- Endocrine/Metabolic
- Neurological – cognitive
- Dental

Management

- Requires a multidisciplinary team approach
  - *Medical* - manage medical concerns, monitor wt., coordinate team
  - *Nutritional* - education, nutrition/dietary plans and options, caloric requirements
  - *Mental health* – individual and family needs, focus on affective issues, medication management
  - *School personnel* – assist with reintegrating into more normal functioning

Mental Health Treatment

- Individual therapy
  - Cognitive behavioral therapy has best outcomes
    - Limited data on efficacy
  - Tries to teach relation between thoughts and feelings and behavior; recognize how related to disordered eating
- Key role of family therapy, particularly younger teens most effective
  - Explicit family involvement in day-to-day treatment
- No evidence for adding psychotropics in absence of co-morbid mental health conditions

When to Admit?
Indications for Hospitalization

- Hypovolemia/ hypotension
- Severe malnutrition - <75% IBW
- Cardiac dysfunction, arrhythmias, prolonged QT interval
- Bradycardia <45 beats/minute
- Electrolyte disturbance – hypokalemia, hypoglycemia
- Rapid weight loss despite interventions
- Intractable binge-purge episodes
- Suicidal thoughts or gestures
- Highly dysfunctional or abusive family
- Failure of outpatient therapy

Protocol-Based In-Patient Treatment

Creating a Therapeutic In-Patient Milieu

- Areas of focus for management
  - Weight gain expectations
  - Supervised eating
  - Activity restriction
  - Limitation on family/peer interactions
    - Include all social networks
  - Psychiatric consultation
  - Parent education

Anorexia Nervosa: Prognosis

- Mortality – 10 years – 6.6%
  - Range 0-18%
- Morbidity – 10- 15 year f/u
  - 75% full recovery
  - 86% partial recovery
    - May still have had some psychosocial impairment
- Predictors of poor outcomes
  - Later age of diagnosis, longer duration, lower minimal weight, low-self-esteem
- 25 – 55% of anorexic patients may become bulimic

Advice for Families

- Have patience with the process of treatment/ recovery
  - Prepare for a marathon, not a 50 yd. dash
- Avoid blaming
- Avoid power struggles over food
- Avoid comments about weight and appearance
- Avoid unreasonable preparations to purchase or prepare special foods
- Get support – individual or couples therapy, support groups
- Get rid of the scale!
- Pay attention to siblings

Questions?

Suggestions for Addressing Challenges

- Talk with professionals from different fields
- Listen and be open to modifying your own approach
- Read literature from outside your discipline
- Foster collaborative relationships
- Gather perspectives from teens and their families
- Address the broad spectrum or weight-related disorders
- In program evaluation, make sure that program has not led to inadvertent increase in other behaviors
- Work with parents to establish healthy eating and activity patterns within families
- Incorporate environmental approaches in interventions

From: Neumark-Sztainer D, AM:Stars, Vol. 14, 2003.

In-patient Medical Monitoring

- Medical/Fluid status
  - Initial labs
    - Electrolytes prn, q week when stable
    - For refeeding - divalents q day for initial 3 days
  - Urine S.G.s – initially and q AM
  - Orthostatic VSs – baseline; then prn
    - Pulse for full 60 seconds; 2 minutes between lying and standing P and BP.
  - Cardiac monitoring
    - Strict bed rest vs. on basis of wt. and lab values

Protocol-Based Management

- **Weight expectations**
  - Baseline weight
  - Close input with nutritionist
    - Determine exchanges, kcals, refeeding kcals,
    - Help determine types of foods to be eaten (no diet/lite), no outside food
  - Strict adherence to weighing procedure
    - Gown, following full void, back to scale, weight not provided to patient
  - Range of weight expected: 2 kgs/week
    - .2-.3 kgs or .4-.5 lbs/week
  - ***Strategies if weight goal not met:
    - Plateauing of privileges; adding supplements
      - 2 first day/ 3 second day/ 4 third day

Mental Health Input

- Psychiatric consultation
  - Baseline – determine diagnosis, co-morbidities
  - Assist with psychotropic medications if necessary; recommendations for range of in-patient or out-pt mental health care/referral
  - Limited time for therapy
    - Generally done in longer term inpatient or outpatient settings
- Family education
  - Regular meetings with team
  - Recommendations for family therapy

Protocol-Based Management

- Eating Behaviors
  - Supervised
  - Time allotted for meals – 30 minutes
    - Supplements provided to meals not eaten
    - One can ensure if meals not eaten with 30'
    - Supplements given on basis of kcals of food not eaten
    - NG tube if Ensure amounts not with 20'
  - Bed rest for 1 hour after each meal – no BR
  - "Abnormal" eating behaviors discouraged when possible

Protocol-Based Management

- Activity Limitations
  - Baseline is generally best rest, no BR if medically unstable
  - Liberalize depending upon VS stability, weight increase
    - Bed rest
    - Room rest – SITTING in chair/bed; no standing, exercising, showering limited to 10 minutes
    - Additional activity allowed with weight increases

Protocol-Based Management

- Social interaction limitations
  - Outside visitation
    - 2 hours with parents; no parental lying-in;
    - Increase to visits with siblings, peers
  - Limits on outside contacts
    - Phone, cell phone, texting
    - Internet
  - *Passes allowed as patient moves through protocol – off ward, outside hospital*