Bulimia and Anorexia: Statistics

• Anorexia
  – 90-95% female
    • Caucasian, middle to upper class
    • Can happen in males
  – Onset = age 13 to 15

– Chronic (less so than bulimia)
  • Even when the individuals have improved (no longer meet clinical criteria), they still generally carry subthreshold symptoms (low BMI and perceptions about image and body shape etc)

– Resistant to treatment?
Cross-Cultural Considerations

• North American minority populations

• Immigrants to Western cultures
  – Increase in eating disorders
    • Egypt Study
  – Increase in obesity

• Cultural values
  – China: acne is a leading precipitant to anorexia

• Standards for body image
Developmental Considerations

• Earlier and Earlier onset in Western World
  – More than half of girls 6-8 report wishing to be thinner. By 9, 20% were trying to lose weight and by 14, 40%.
  – In early onset cases, there is often fluid restriction as well.

• Adolescent onset

• Interaction with social ideals
  – Adiposity and weight gain
  – Puberty brings boys closer to ideal and girls farther away.

• Late onset eating disorders?
Causes of Eating Disorders

Social Dimensions

– Cultural imperatives
  • Thinness = Success & happiness

– Media standards
  • Impossible to meet

– Social and gender standards
  • Internal and perceived
Adriana Lima's going to great lengths to look runway ready for the Victoria's Secret Fashion show. The model revealed to the U.K. Telegraph that since September, she's been working out twice a day with a personal trainer. Lima also drinks a gallon of water a day and for nine days before the show, she'll drink only protein shakes with powdered egg -- "no solids."
Ideal body size standards change rapidly. Playboy and Miss America contestants have ideal body size standards that change over time. Studies by Whiseman, Gray, Mosimann, and Ahrens (1992), Garner, Garfinkel, Schwartz, and Thompson (1980), and Rubenstein and Cabalero (2000) have investigated these changes.
pronation

• http://pro-ana-nation.livejournal.com/

• Trends in recent years
• Social Dimensions
  – Dieting trends
    • Can actually cause weight gain
  – Perceptions of fat
    • Self image (attractive study)
  – Social and peer groups
    • Friends study
  – Dietary restraint (WWII study)
    • Dieting teenagers 8x more likely to develop ED
    • Restrainers more likely to over-eat!
The 30-year-old actress reveals her strict vegan diet in Vogue's December issue.

"I had to be obsessive about it -- the idea was to look near death," Hathaway tells Vogue.

The diet? First, a cleanse that dropped 10 pounds; then, after taking two weeks off from filming, she lost 15 pounds by eating only two squares of dried oatmeal paste daily. A perfect diet -- for someone portraying a girl dying from tuberculosis.
ADVERTISING ANOREXIA?
Levine and Smolak, 1996
Causes of Eating Disorders

- 1969: 30% of high-school females dieting
  20% of men
- 1993: 60.6% of females
  28.4% of men dieting

- Family Influences
  - “Typical” family
    - Successful
    - Driven
    - Concerned about appearance
    - Maintains harmony
  - History of dieting, eating disorders
    - Mothers
Causes of Eating Disorders

• Biological Dimensions
  – Heritability studies
    • Relatives 4 to 5x more likely
    • 23% monozygotic
    • 9% fraternal
  No adoption studies… yet!

  – Inherited tendency to be emotionally responsive to stress, eat impulsively

  – Perfectionism

  – Reward Systems?

  – Hypothalamus?
    • Low Serotonin
      – Impulsivity and binge eating
- The global volumes of gray matter (but not white matter) were decreased in patients with anorexia nervosa by approximately 1%.

- Gray matter decrease bilaterally in the anterior cingulate cortex of approximately 5%.

- In anorexia nervosa, part of the global gray matter loss persists over the long run. Region-specific gray matter loss in the anterior cingulate cortex is directly related to the severity of anorexia nervosa, indicating an important role of this area in the pathophysiology of the disorder.
• Imaging literature is behind but catching up.
• Our study found more similarities between ED groups than differences (e.g., increased left orbitofrontal gyrus).
• There were some differences though (anorexia was associated with right insula increase whereas bulimia was associated with left insula increase).
• The larger volume is associated with stronger sensory experience of food stimuli, which could be experienced as overwhelming (supported by increased reward/punishment sensitivity) which could trigger maladaptive food behaviors (possibly moderated by personality or other disorders; e.g., avoidance)
• Not much difference between acute and recovered cases
• No longitudinal perspective
Causes of Eating Disorders

• Diets alone are not enough to cause EDs

• **Psychological Dimensions**
  – Low sense of personal control
  – Low self-confidence
  – Perfectionistic attitudes
  – Distorted body image
  – Preoccupation with food and appearance
  – Mood intolerance
Drug Treatments of Eating Disorders

• Anorexia
  – No demonstrated efficacy

• Bulimia
  – Antidepressants
    • May enhance psychological treatment
    • No long-term efficacy
      – Prozac is better than placebo in the short term (lessening binge purge behavior)
        » But in the long term, it does nothing in terms of relapse
Deep brain stimulation

Psychological Treatment of Bulimia and Binge eating

- **Cognitive-behavior therapy (CBT-E; Fairburn)-developed in 80s**
  - Older treatments dealt with identify issues and self-esteem
  - **Treatment of choice**
  - Target problem eating behavior
  - Psychoeducation about dieting
  - Small manageable meals (5-6 times a day) with no more than 3 hours between, helps to eliminate the alternating periods of over-eating and restriction (hallmarks of Bulimia).
  - Transdiagnostic approach- targets concerns with body shape and weight
    - Good for NOS and other EDs

- Also, CBT appears to work better for Bulimia when paired with an SSRI
  - (CBT is superior to medication alone though)

- **Interpersonal psychotherapy**
  - Improve interpersonal functioning
  - Similarly effective, long-term (catch up)
  - CBT may work quicker but if CBT doesn’t work, then interpersonal psychotherapy may help.
  - to CBT for binge eating
Psychological Treatment: Anorexia Nervosa

• If below 70% of average, or rapid weight loss occurs, then inpatient is recommended

• Weight restoration
  – May require hospitalization

• Psychoeducation

• Target dysfunctional attitudes
  – Body shape
  – Control
  – Thinness = worth

<table>
<thead>
<tr>
<th>TABLE 8.3</th>
<th>Strategies to Attain Weight Gain</th>
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<tbody>
<tr>
<td>1. Weight restoration occurs with other treatments, such as individual and family therapy, so that the patient does not feel that eating and weight gain are the only goals of treatment.</td>
<td></td>
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<tr>
<td>2. The patient trusts the treatment team and believes that she will not be allowed to become overweight.</td>
<td></td>
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<td>3. The patient’s fear of loss of control is contained; this may be accomplished by having her eat frequent, smaller meals (for example, four to six times per day, with 400 to 500 calories per meal) to produce a gradual but steady weight gain (for example, an average of 0.44 pounds per day).</td>
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<tr>
<td>4. A member of the nursing staff is present during mealtimes to encourage the patient to eat and to discuss her fears and anxiety about eating and weight gain.</td>
<td></td>
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<tr>
<td>5. Gradual weight gain rather than the amount of food eaten is regularly monitored, and the result is made known to the patient; thus, the patient should be weighed at regular intervals, and she should know whether she has gained or lost weight.</td>
<td></td>
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<tr>
<td>6. Some negative and positive reinforcements exist, such as the use of graduated level of activity and bed rest, whether or not these reinforcements are formally conceptualized as behavior modification techniques so that the patient may thereby learn that she can control not only her behavior but also the consequence of her behavior.</td>
<td></td>
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<tr>
<td>7. The patient’s self-defeating behavior, such as surreptitious vomiting or purging, is confronted and controlled.</td>
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<td>8. The dysfunctional conflict between the patient and the family about eating and food is not reenacted in the hospital or, if the pattern is to be reenacted in a therapeutic lunch session, the purpose is clearly defined.</td>
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</tbody>
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Psychological Treatment of Anorexia (cont.)

• Initial weight gain is a poor predictor of long-term outcome.

• Family involvement
  – Communication about eating/food
  – Attitudes about body shape
  – Seeing parents separately may work better
    - Family based treatment more effective outcome than individual therapy (control)

• Long-term prognosis
  – Poorer than bulimia
Preventing Eating Disorders

• Identify specific targets
  – Early weight concerns
    (Stice et al 2007)
  - Targeted high-risk group approach
    works better than universal approaches
    (4 weekly groups with 6 people; Healthy Weight group)
    Good outcome ½ year later - Particularly for the most at-risk people

• Screening for at-risk groups

• Provide education
  – Normal weight limits
  – Effects of calorie restriction

• Can be internet-based
  – Ebody project (Stice): https://www.ebodyproject.org/

<table>
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<tr>
<th>TABLE 8.4 Weight Concerns*</th>
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</thead>
<tbody>
<tr>
<td>1. How much more or less do you feel you worry about your weight and body shape than other girls your age?</td>
</tr>
<tr>
<td>a. I worry a lot less than other girls (4)</td>
</tr>
<tr>
<td>b. I worry a little less than other girls (8)</td>
</tr>
<tr>
<td>c. I worry the same as other girls (12)</td>
</tr>
<tr>
<td>d. I worry a little more than other girls (16)</td>
</tr>
<tr>
<td>e. I worry a lot more than other girls (20)</td>
</tr>
<tr>
<td>2. How afraid are you of gaining 3 pounds?</td>
</tr>
<tr>
<td>a. Not afraid of gaining (4)</td>
</tr>
<tr>
<td>b. Slightly afraid of gaining (8)</td>
</tr>
<tr>
<td>c. Moderately afraid of gaining (12)</td>
</tr>
<tr>
<td>d. Very afraid of gaining (16)</td>
</tr>
<tr>
<td>e. Terrified of gaining (20)</td>
</tr>
<tr>
<td>3. When was the last time you went on a diet?</td>
</tr>
<tr>
<td>a. I've never been on a diet (3)</td>
</tr>
<tr>
<td>b. I was on a diet about 1 year ago (6)</td>
</tr>
<tr>
<td>c. I was on a diet about 6 months ago (9)</td>
</tr>
<tr>
<td>d. I was on a diet about 3 months ago (12)</td>
</tr>
<tr>
<td>e. I was on a diet about 1 month ago (15)</td>
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<tr>
<td>f. I was on a diet less than 1 month ago (18)</td>
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<tr>
<td>g. I'm now on a diet (21)</td>
</tr>
<tr>
<td>4. How important is your weight to you?</td>
</tr>
<tr>
<td>a. My weight is not important compared to other things in my life (5)</td>
</tr>
<tr>
<td>b. My weight is a little more important than some other things (10)</td>
</tr>
<tr>
<td>c. My weight is more important than most, but not all, things in my life (15)</td>
</tr>
<tr>
<td>d. My weight is the most important thing in my life (20)</td>
</tr>
<tr>
<td>5. Do you ever feel fat?</td>
</tr>
<tr>
<td>a. Never (4)</td>
</tr>
<tr>
<td>b. Rarely (8)</td>
</tr>
<tr>
<td>c. Sometimes (12)</td>
</tr>
<tr>
<td>d. Often (16)</td>
</tr>
<tr>
<td>e. Always (20)</td>
</tr>
</tbody>
</table>

*Value assigned to each answer is in parentheses. Thus, if you chose an answer worth 12 in questions 1, 2, 3, and 5 and an answer worth 10 in question 4, your score would be 58. (Remember that the predictions from this scale worked for girls age 11–13 but hasn’t been evaluated in college students.)
Israel
Italy, France
Eating Disorders: An Overview

• **Obesity**
  – 65% of US adults overweight
  – 30% obese in 2000; 35% now
  – Different rates in African America and Hispanic groups
  – Rates are increasing most for young (tripled in 25 years)
  – Although low in Japan, rates have doubled since 1992
  – BMI versus weight
  – Health Risks
Damn!
Obesity - Statistics

- Rapid increases in prevalence
  - U.S. adults
    - 1991 = 12%
    - 2004 = 32.2%
  - Teens and young children
    - 2000 = 13.9%
    - 2004 = 17.1%
  - Developing nations
  - Not in DSM?
  - Not just attributed to Binge eating (only 7-15% of obese individuals show symptoms)

This population has slightly higher affective and lower substance abuse!

Night eating syndrome: 7-15 obese but up to 27% in extreme obesity.
>= one third of daily calories after evening meal.
Causes of Obesity

Spread of modernization
- Inactive, sedentary lifestyle + high fat foods

Genetics
- 30% of the cause

Biological factors
- Initiation and maintenance of eating

Psychosocial factors
- Impulse control, affect regulation, attitudes
Obesity imaging study

- This study indicates a strong association between medial orbitofrontal cortex volume and taste reinforcement-learning activation in the brain in control but not in obese women. Lower brain volumes in the orbitofrontal cortex and other brain regions associated with taste reward function as well as lower integrity of connecting pathways in obesity (OB) may support a more widespread disruption of reward pathways. The medial orbitofrontal cortex is an important structure in the termination of food intake and disturbances in this and related structures could contribute to overconsumption of food in obesity.
Obesity Treatment

• Progression from least to most intrusive
  – Self-directed weight loss programs
  – Commercial self-help programs
  – Behavior modification programs
  – Bariatric surgery

• Efficacy
  – Moderate for adults
  – Higher for children and adolescents
    • Family involvement