Eating Disorders in Athletes: Women and Men

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Why discuss eating disorders and the athlete?
- Eating disorders are common in athletes
- Athletes have unique risk factors for developing disordered eating
- Presentation may be difficult to differentiate from healthy lifestyles
- Early detection decreases health impact

Objectives
- Review the spectrum of disordered eating and eating disorders
- Review the approach to screening athletes for disordered eating
- Understand the relationships between the components of the female athlete triad
- Discuss unique features of eating disorders and body image problems in males

Eating Disorders vs. Disordered eating
- Eating Disorders: Clinical disorders fulfilling DSM IV criteria with disturbances in emotions, attitudes, and eating behaviors
- Disordered Eating: Presence of unhealthy eating behaviors that do not meet criteria of clinical eating disorders

Unhealthy Eating Behaviors
- Under nutrition: inadequate caloric intake to meet demands of sport - “energy drain”
- Skipping meals / chronic dieting / restriction
- Overeating / purging
- Use of diet pills, laxatives, diuretics
- Use of supplements, steroids, or other drugs

Disordered Eating: A Spectrum

Healthy Eating ≠ Disordered Eating ≠ Eating Disorder

<table>
<thead>
<tr>
<th>Healthy Eating</th>
<th>Disordered Eating</th>
<th>Eating Disorder</th>
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<tbody>
<tr>
<td>Intake = Output</td>
<td>Intake ≠ Output</td>
<td>Weight loss</td>
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<tr>
<td>Regular meals</td>
<td>Skipping meals</td>
<td>Low BMI</td>
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<td>Less fast food</td>
<td>Chronic dieting</td>
<td>Amenorrhea</td>
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<tr>
<td>Less junk food</td>
<td>Restricting</td>
<td>Purging</td>
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<td>More water</td>
<td>Low fat/sugar</td>
<td>Body distortion</td>
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<td>Fruits and veggies</td>
<td>“Forbidden foods”</td>
<td>Mortality</td>
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</table>
Classification of Clinical Eating Disorders

- Anorexia Nervosa (AN)
- Bulimia Nervosa (BN)
- Eating Disorder NOS (ED-NOS)
- Binge Eating Disorder (BED)
- Body Dysmorphic Disorder

Anorexia Nervosa

Prominent behavioral, psychological, and physiological disturbances associated with the pursuit of thinness in the presence of severe emaciation.

Anorexia Nervosa DSM IV Criteria

- Body weight < 85% expected weight
- Intense fear of weight gain or "getting fat"
- Body dissatisfaction and body image distortion
- Amenorrhea

Bulimia Nervosa

Recurrent episodes of binge eating followed by inappropriate compensatory behavior to prevent weight gain.

Bulimia Nervosa DSM IV Criteria

- Binge eating > 2 times/wk for 3 months
- Purging or other compensatory weight loss measures > 2 times/wk for 3 months
- Persistent concern about body weight and shape
- Absence of anorexia nervosa

Eating Disorder NOS DMS IV

- Criteria for Anorexia Nervosa except maintain regular periods and weight within normal range
- Criteria for Bulimia Nervosa except binges < 2x/wk or < 3x/month
- Normal body weight, but inappropriate compensatory behavior after small amounts of food
- Repeated chewing and spitting of food without swallowing
- Recurrent episodes of binge eating without regular use of inappropriate compensatory behaviors
Eating Disorders Risk Factors
Non-Athletes and Athletes

- Psychological Factors
- Interpersonal Factors
- Social Factors
- Biological Factors

Psychological Factors

General
- Low self-esteem
- Feelings of inadequacy or lack of control in life
- Depression, anxiety, anger, or loneliness

Athletes
- Performance pressure
- Early childhood training or elite status
- Misconception regarding weight and performance

Interpersonal Factors

General
- Troubled family and personal relationships
- Difficulty expressing emotions and feelings
- History of being teased or ridiculed for body size
- History of physical or sexual abuse

Athletes
- Coaches emphasis on success and performance
- Participation in individual sports (vs team sports)

Social Factors

General
- Society that glorifies “thinness” and maintains narrow definitions of beauty

Athletes
- Lean based sports: gymnastics, distance running, dance
- Weight classed sports: wrestling, martial arts, rowing
- Appearance based sports: ice skating, gymnastics, diving

Biological Factors

General
- Possible biochemical or biological causes of eating disorders
- Genetic contributions; familial patterns

Athletes
- Energy demands/stress of sport

Prevalence within Athletes

- Prevalence of disordered eating in athletes (sub-clinical and clinical disorders)
  - 1% - 62% of female athletes
  - 0% - 57% in male athletes
Case study

16 y.o. female high school junior presents for pre-participation physical

No PMH

Pertinent Psycho/Social: Honor role student, Not sexually active, No drugs/EtOH.

Has run competitive X-country for 2 years

She is given the pre-participation questionnaire.

Pre-Participation Questionnaire

Nutrition Questions

42. Are you happy with your weight? [X]
43. Are you trying to gain or lose weight? [X]
44. Has anyone recommended you change your weight or eating habits? [X]
45. Do you limit or carefully control what you eat? [X]

Secondary Nutritional Questions

Used when there are positive answers on the PPE questionnaire

- Weight history over past year (Max & Min weight)
- How much would you like to weigh?
- Satisfaction with current weight and/or body composition?
- Use of any supplements, pills, laxatives, vomiting?
- Are you doing any other activities? (outside of main sport)
- 24 hour diet recall- what did you eat yesterday?
**Menstrual History**
Secondary screening questions

- Usual time between periods?
- What was the longest time between periods in the last year?
- Any chance that you are pregnant?

**Does this pre-participation screening raise red flags?**

- Perception that weight loss will improve performance
- 24 hour recall - healthy foods, but caloric intake not meeting demands ("energy drain")
- Desire for additional weight loss in the presence of amenorrhea

**Female Athlete Triad**

Disordered Eating

Amenorrhea

Osteoporosis

**Components of the Female Athlete Triad**

- **Disordered Eating**
  - Spectrum from under-nutrition, unhealthy behaviors to clinical eating disorders (Anorexia and Bulimia)
- **Amenorrhea**
  - Includes range of menstrual dysfunction
  - Minimal caloric input to maintain LH pulsatility
- **Osteoporosis**
  - Decreased estrogen levels affect bone
  - Occur during time of peak bone density
  - May be partially offset by weight bearing sports

**Disordered Eating in Male Athletes**
### Risk Factors for Disordered Eating in Males

**General**
- Similar triggers and comorbid mood disorders as females
- Prior history of obesity common
- Higher levels of substance abuse
- Association with homosexuality or bisexuality

**Male Athletes**
- Performance pressure - weight gain or loss
- Appearance focused sports, lean based
- Weight based competitions
- Body Dysmorphic Disorder

### Body Dysmorphic Disorder DSM IV

- Preoccupation with an imagined or slight defect in appearance that causes clinically significant distress or impairment in functioning and is not better accounted for by another disorder, such as anorexia nervosa.

### Muscle Dysmorphia

- Sub-category of Body Dysmorphic Disorder.
- Focus on muscularity.
- Feel small when actually normal or muscular "Reverse anorexia" or "Bigorexia."
- Meticulous diet and prolonged work-outs.
- Prevalence ~ 10% of body builders.

*Pope et a Psychosomatics 1997*

### Primary Screening in Male Athletes

- Same general approach used in women
  - PPE questionnaire with follow-up if positive "red flags"
  - Growth charts
- Look for large changes in weight UP or DOWN
- Large weight gain with muscularity - steroids?

### Secondary Screening in Male Athletes

- Hours spent training- Is training interfering with other aspects of their lives?
- Discussion of supplements, steroids
- Careful screening for ETOH and drug abuse
- Screening for sexuality orientation
- Body satisfaction

### What is the next Step

- Recognizing the athlete with disordered eating is the most important step
- Basic education regarding health consequences and impact on performance
- Providing information on appropriate nutrition for the athlete and families
- Know resources within your community
Treatment Approach in Athletes

Multidisciplinary
- Medical
- Nutritional
- Psychiatric/Psychological
- Must also include:
  - Coaches
  - Athletic trainers
  - Families
  - Athlete

Take home messages
- Eating Disorders are common in both female and male athletes
- Pre-Participation Questionnaire is a Primary Screening tool that can help identify athletes at risk
- Secondary Screening requires understanding both traditional risk factors and those unique to athletes
- Intervention requires multidisciplinary approach

References/ Resources
  http://www.acsm.msse.org
- Fact sheets: www.NationalEatingDisorders.org

Epidemiology of Anorexia
- Prevalence .5 - 1%
- Peak age 14-16
- 90-95% of anorectics are female
- Female: male ratio of 10:1

Epidemiology of Bulimia
- Lifetime prevalence of 1-4%
- Peak Incidence 18 years old
- Female: Male ratio estimated 10-20:1
- Similarly affects all races, ethnicities, and socioeconomic groups.

Health Consequences
- Disordered eating
  - Nutritional deficiencies and electrolyte disturbance
  - Gastrointestinal problems
  - Cardiovascular abnormalities
  - Psychiatric problems
- Amenorrhea
  - Lower estrogen impacts bone health
  - Fertility
- Osteoporosis (Osteopenia)
  - Stress fracture
  - 90% of adult bone mineral content (BMC) obtained during adolescence

Team Physician Consensus Statement 2003