

Myths and Misconceptions about Eating Disorders

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Introduction

- Eating disorders are...
 - COMMON
 - DEADLY
 - DIFFICULT TO DIAGNOSE
 - DSM 5 (2013) has resulted in huge changes
- Many residencies do not offer much training around eating disorders
- Many myths and misconceptions in the community at large about diagnosis and management

True or False?

1. You need to be amenorrheic to have anorexia nervosa
2. You need to have weight loss to have anorexia nervosa
3. You need to have a binge and purge to have bulimia
4. If you binge and purge, you don't have anorexia
5. If you don't binge and purge, you don't have an eating disorder
6. A low BMI is normal if he/she is athletic.
7. Amenorrheic adolescent patients should be started on estrogen therapy.

FALSE!

Myth #1: You need to be amenorrheic to meet criteria for anorexia nervosa

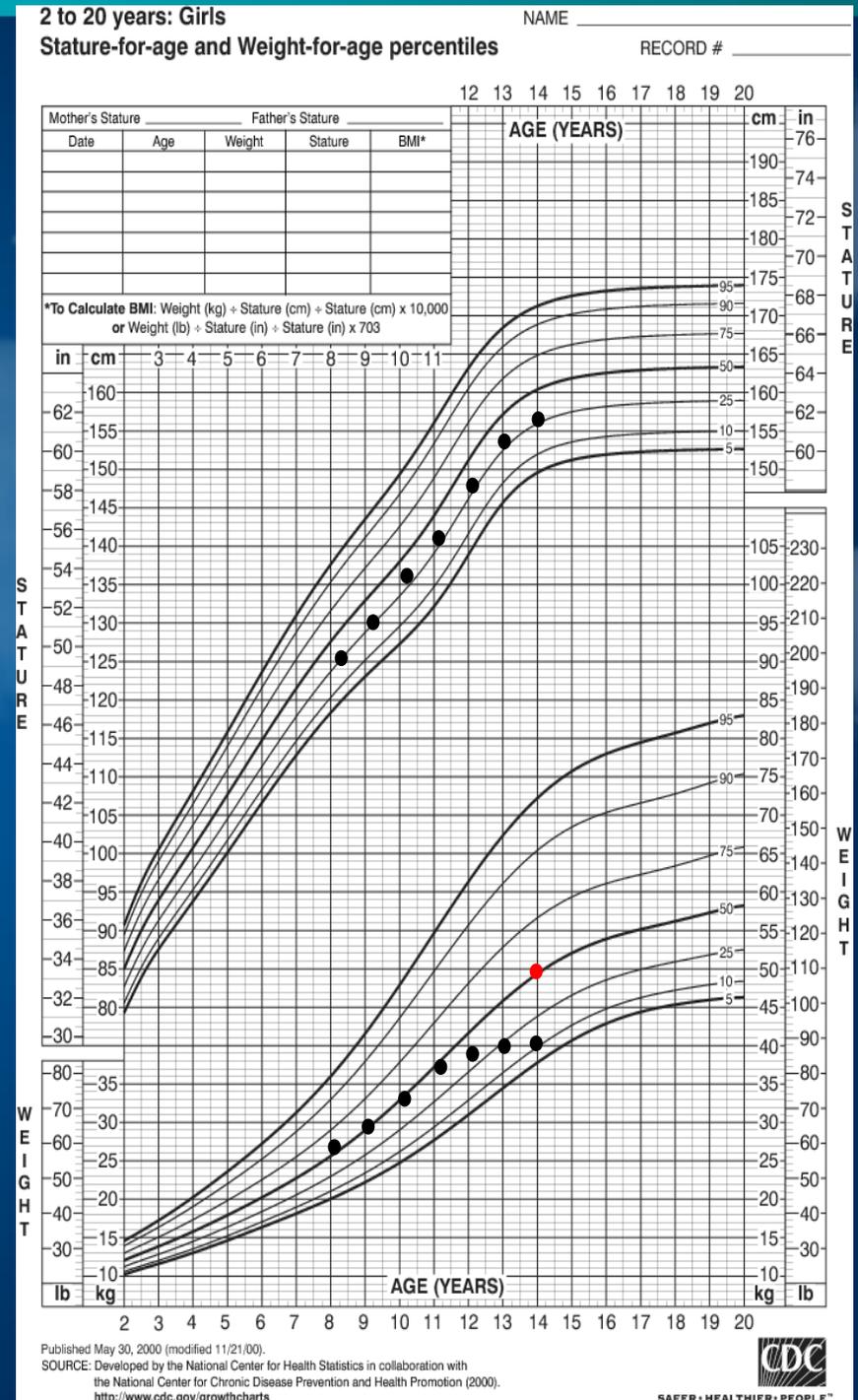
- DSM 5 has removed the amenorrhea criterion
- Why? Excludes the following groups:
 - Males
 - Females on contraception
 - Premenarchal females
 - Age of onset of AN is decreasing with time^{1,2}
 - Incidence is rising among children 12 and under^{3,4}
 - Hospitalization in this age group has increased by almost 120%⁵
- Normal puberty is still a valuable clinical marker of nutritional status
- Serum estradiol and testosterone can be useful laboratory markers of nutritional status

Myth #2: You need to have weight loss to be diagnosed with anorexia nervosa.

- Children and peripubertal adolescents **SHOULD GAIN WEIGHT** EACH YEAR.
 - “You can’t make something out of nothing”
 - There is a pubertal “weight spurt” just as there is a “height spurt”
 - Peak weight velocity: 8-9 kg/year^{1,2}
 - Girls should increase their body fat % during puberty
- Therefore, **failure to gain weight as expected** is as serious as actual weight loss.
- Critical to plot weight and height on growth curves at EVERY pediatric visit, including acute visits

An Example:

- Failure to gain adequate weight may lead to:
 - Height stunting
 - Poor pubertal progression
 - Decreased bone density
- Not to mention micronutrient deficiencies and acute eating disorder complications



Myth #3: You need to have a low BMI to have anorexia nervosa.

- ↑ previously overweight children/adolescents presenting with restrictive eating disorders (Whitelaw et al, 2014) – normal or high BMI at presentation
 - Equal risk of cardiac complications and refeeding syndrome
- One review of teens with eating disorders (Lebow et al, 2015): 30-40% were previously overweight
 - Had lost more weight at diagnosis
 - Had longer time to diagnosis
- Peebles et al (2010): higher-weight patients who lost >25% of body weight were more medically compromised than those presenting at lower weights
- Berner et al, 2013: proportion of weight lost and rate of weight loss = more predictive of complications than absolute weight/BMI

Myth #3: You need to have a low BMI to have anorexia nervosa.

- Atypical anorexia nervosa: meet all criteria of anorexia nervosa (intentional weight loss, body image problems) EXCEPT normal or high BMI at presentation
 - Require treatment just as urgently as AN patients with low BMIs
- How do you choose ideal body weight?
 - If always overweight, use minimum 75th p.c. BMI. BUT...
 - Ultimately, IBW is the weight at which **PHYSIOLOGIC FUNCTIONS NORMALIZE**
 - Normal puberty progression and menstrual function
 - Normal cardiovascular status
 - Normal linear growth

Myth #3: You need to have a low BMI to have anorexia nervosa.

- BE CAREFUL when advising overweight patients about weight loss
 - Pro-actively warn about the risks of rapid weight loss
 - Max 1-2 lbs per week
 - DO NOT praise rapid weight loss
 - Screen for disordered eating behaviors
 - Check vitals/labs/EKG, monitor menses/puberty/height
 - Counsel about body image and self-esteem

Myth #4: If you binge and/or purge as part of your eating disorder, you have bulimia nervosa

- Correction: you MAY have bulimia nervosa.
- **Bulimia nervosa:**
 - Must both binge and purge
 - Frequent and regular (do both at least once a week x 3 months)
 - DOES NOT MEET CRITERIA FOR ANOREXIA NERVOSA (i.e. low weight)
- **Anorexia Nervosa, Binge-Purge Subtype:**
 - Meet criteria for anorexia nervosa (low weight) AND features of bingeing and/or purging (frequency does not matter)
- **Binge-eating disorder:**
 - Bingeing at least once per week x 3 months

Myth #5: If you don't have body image problems, you don't have an eating disorder

- **Problem #1**: ability to express body image problems requires developmental and cognitive maturity
 - Age of onset
 - Cognitive impairment
- DSM 5 criteria for anorexia nervosa has been revised – their **BEHAVIOR** is what matters

Myth #5: If you don't have body image problems, you don't have an eating disorder

- Problem #2: you can still have severe eating problems that are not related to body image
- New in DSM 5: “Avoidant/Restrictive Food Intake Disorder (ARFID)”
 - ANY of the following:
 - Weight loss or failure to gain weight as expected
 - Significant nutrient deficiency
 - Dependence on enteric feeding (NG, G-tube) or oral nutritional supplements
 - Marked interference with psychosocial functioning
 - BUT: no body image problems, no lack of access to food, no culturally-sanctioned food restriction, and no other explanatory mental health/medical condition

Myth #5: If you don't have body image problems, you don't have an eating disorder

- Examples of ARFID patients:
 - Fear of vomiting
 - Fear of choking
 - Fear of food allergy
 - Intolerance of certain food textures or colors
- Characteristics of ARFID (Fisher et al, 2014; Nicely et al, 2014)
 - Younger in age
 - Male or female
 - More medical or psychiatric comorbidities (e.g. anxiety disorder)
- Just as likely to have severe medical complications
- Must be recognized and treated

Myth #6: A low heart rate in a thin patient is normal is he/she is athletic

- Endurance athletes: increased ventricular wall thickness and increased SV¹
 - $CO = SV \times HR$
 - Extremely high CO during exercise
 - For a normal CO at rest, resting HR can be lower
- Anorexia nervosa: decreased ventricular wall thickness and atrophic myocardium → decreased EF, SV, and CO²⁻⁴
 - Poor peripheral perfusion, hypotension, heart failure → NOT NORMAL
 - Reverses with weight restoration
- **Be particularly weary in patients with other signs of malnutrition (e.g. amenorrhea, decreased bone density)**

Myth #7: Amenorrheic eating disorder patients should be started on estrogen therapy

- Mechanism of action: hypogonadotropic hypogonadism
 - Low estradiol, low FSH and LH
 - **PHYSIOLOGIC** response of the hypothalamus to malnutrition, weight loss, and/or stress
- Estrogen therapy will **NOT** reverse this process if the patient is still malnourished
 - “Illusion” of a period (withdrawal bleed) fixes nothing!

Myth #7: Amenorrheic eating disorder patients should be started on estrogen therapy

- Estrogen replacement NOT indicated to prevent or treat osteopenia
 - Multiple studies have shown that PO estrogen or OCP does NOT reverse osteopenia in adolescents or adults with eating disorders¹⁻³
 - Why?
 - MULTIPLE hormones contribute to osteopenia (e.g. cortisol, IGF-1, leptin, insulin, oxytocin), not just estrogen⁴
 - First-pass effect of PO estrogen → insufficient bioavailability
 - Estrogen patch may MAINTAIN (but not improve) bone density,⁵ still experimental
- **The ONLY effective treatment for either amenorrhea or osteopenia in eating disorders is COMPLETE WEIGHT RESTORATION.**

Practice Case #1

- A mother brings her 17-year-old daughter into your office for a cold. You notice that although the girl was obese at her physical 4 months ago (BMI 30, >95th p.c.), today her BMI is 21 (just over 50th p.c.). She has lost >25 kg by “eating better and exercising.” Mom is very proud of her.
- What should you do first?
 - A. Praise her for her hard work
 - B. Check her vitals, order bloodwork and an EKG
 - C. Tell her she should slow down on her weight loss and refer her to a dietitian

Practice Case #2

A 15 yo F comes to see you for irregular periods. Previous periods were monthly but now they have been getting further apart – LMP was 3-4 months ago. She has lost 20-30 lbs recently by “eating healthier” and running 5 miles a day, ROS otherwise normal. Labs show negative beta HCG, normal TSH, normal prolactin, normal androgens, low FSH/LH, and low estradiol.

- How will you manage her irregular periods?
 - A. 10-day Provera challenge
 - B. Start daily oral contraceptive pill or daily PO estrogen
 - C. Refer for eating disorder treatment and weight restoration

Summary

- Significant revisions to DSM5 makes it easier to diagnose pediatric patients with eating disorders
- May have severe malnutrition requiring treatment even with
 - No actual weight loss (failure to gain)
 - A normal or even a high BMI
 - No body image problems
- Bradycardia associated with signs/symptoms of poor cardiac output or other signs of malnutrition is not “athletic heart”
- There is no current role for estrogen therapy in treating amenorrhea or osteopenia in eating disorders

References

1. Agency for Healthcare Research and Quality. Eating disorders sending more Americans to the hospital. *AHRQ News and Numbers*. April 1, 2009. Available at: www.ahrq.gov/news/nn/nn040109.htm.
2. Baggish AL and Wood MJ. Contemporary Reviews in Cardiovascular Medicine. Athlete's Heart and Cardiovascular Care of the Athlete. *Circulation*. 2011; 123: 2723-2735. doi: 10.1161/CIRCULATIONAHA.110.981571
3. Barnes HV. Physical growth and development during puberty. *Med Clin North Am* 1975;59:1305-17.
4. Berner, L., Shaw, J., Witt, A., and Lowe, M. The relation of weight suppression and body mass index to symptomatology and treatment response in anorexia nervosa. *J Abnorm Psychol*. 2013; 122: 694-708
5. Casiero D¹, Frishman WH. Cardiovascular complications of eating disorders. *Cardiol Rev*. 2006 Sep-Oct;14(5):227-31.
6. Favaro A, Caregaro L, Tenconi E, et al. Time trends in age at onset of anorexia nervosa and bulimia nervosa. *J Clin Psychiatry* 2009;70:1715e21
7. Fisher MM, Rosen DS, Ornstein RM, Mammel KA, Katzman DK, Rome ES, Callahan ST, Malizio J, Kearney S, Walsh BT. Characteristics of avoidant/restrictive food intake disorder in children and adolescents: a "new disorder" in DSM-5. *J Adolesc Health*. 2014 Jul;55(1):49-52.
8. Golden NH, Lankowsky L, Schebendach J, Palestro CJ, Jacobson MS, Shenker IR. The effect of estrogen-progestin treatment on bone mineral density in anorexia nervosa. *J Pediatr Adolesc Gynecol*. 2002;15:135-143.
9. Klibanski A, Biller B, Schoenfeld D, Herzog D, Saxe V. The effects of estrogen administration on trabecular bone loss in young women with anorexia nervosa. *J Clin Endocrinol Metab*. 1995;80:898-904.
10. Lebow J¹, Sim LA², Kransdorf LN³. Prevalence of a history of overweight and obesity in adolescents with restrictive eating disorders. *J Adolesc Health*. 2015 Jan;56(1):19-24. doi: 10.1016/j.jadohealth.2014.06.005. Epub 2014 Jul 18.
11. Madden S, Morris A, Zurynski YA, et al. Burden of eating disorders in 5-13-year-old children in Australia. *Med J Aust* 2009;190:410e4.
12. Misra M, Katzman D, Miller KK, Mendes N, Snelgrove D, Russell M, Goldstein MA, Ebrahimi S, Clauss L, Weigel T, et al. Physiologic estrogen replacement increases bone density in adolescent girls with anorexia nervosa. *J Bone Miner Res*. 2011;26:2430-2438
13. Misra M, Klibanski A. Anorexia nervosa and bone. *J Endocrinol*. 2014 Jun;221(3):R163-76.
14. Nicely TA, Lane-Loney S, Masciulli E, Hollenbeak CS, Ornstein RM. Prevalence and characteristics of avoidant/restrictive food intake disorder in a cohort of young patients in day treatment for eating disorders. *J Eat Disord*. 2014 Aug 2;2(1):21.
15. Olivares JL¹, Vázquez M, Fleta J, Moreno LA, Pérez-González JM, Bueno M. Cardiac findings in adolescents with anorexia nervosa at diagnosis and after weight restoration. *Eur J Pediatr*. 2005 Jun;164(6):383-6. Epub 2005 Mar 15.
16. Peebles, R., Hardy, K., Wilson, J., and Lock, J. Are diagnostic criteria for eating disorders markers of medical severity?. *Pediatrics*. 2010; 125: 1193-1201
17. Romano C¹, Chinali M, Pasanisi F, Greco R, Celentano A, Rocco A, Palmieri V, Signorini A, Contaldo F, de Simone G. Reduced hemodynamic load and cardiac hypotrophy in patients with anorexia nervosa. *Am J Clin Nutr*. 2003 Feb;77(2):308-12.
18. Strokosch GR, Friedman AJ, Wu SC, Kamin M. Effects of an oral contraceptive (norgestimate/ethinyl estradiol) on bone mineral density in adolescent females with anorexia nervosa: a double-blind, placebo-controlled study. *J Adolesc Health*. 2006;39:819-827.
19. Tanner JM. The relationship of puberty to other maturity indicators and body composition in man. *Symp Soc Stud Hum Biol* 1965;6:211.
20. van Son GE, van Hoeken D, Bartelds AI, et al. Time trends in the incidence of eating disorders: A primary care study in the Netherlands. *Int J Eat Disord* 2006;39:565e9.
21. Whitelaw M¹, Gilbertson H², Lee KJ³, Sawyer SM⁴. Restrictive eating disorders among adolescent inpatients. *Pediatrics*. 2014 Sep;134(3):e758-64.
22. Zhao Y, Escinosa W. An update on hospitalizations for eating disorders, 1999 to 2009: Statistical brief. Rockville, MD: Agency for Health Care Policy and Research; 2011.

Thank You!

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