

No relevant financial disclosures

I will not discuss any off-label uses of any medications or devices



1. **Describe** the scope of disordered eating behaviors in adolescence including DSM eating disorders.
2. **Discuss** appropriate screening and management strategies.
3. **Formulate** an approach to caring for patients with eating disorders that addresses both the medical and psychiatric complexity of their experiences.



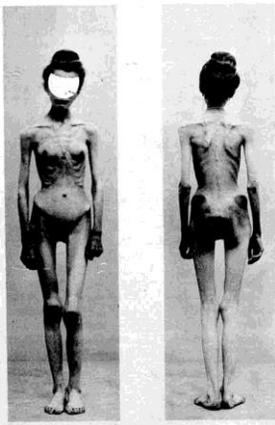
Richard Morton c. 1689



Sir William Gull c. 1868



"Nouvelle Iconographie de la Salpêtrière" c. 1900



c. 1743 “true boulimus”:

having an intense preoccupation with food and overeating at very short intervals, terminated by vomiting



Jessica

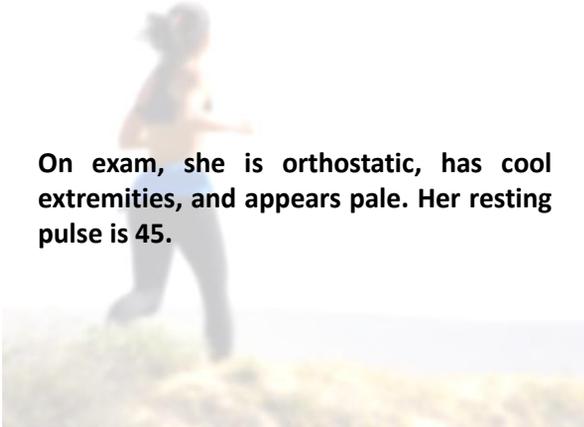
Jessica is a 17 yo who presents with her parents for evaluation of weight loss and fatigue. She runs cross country and began to lose weight during pre-season. She has lost 30 pounds over 3 months.



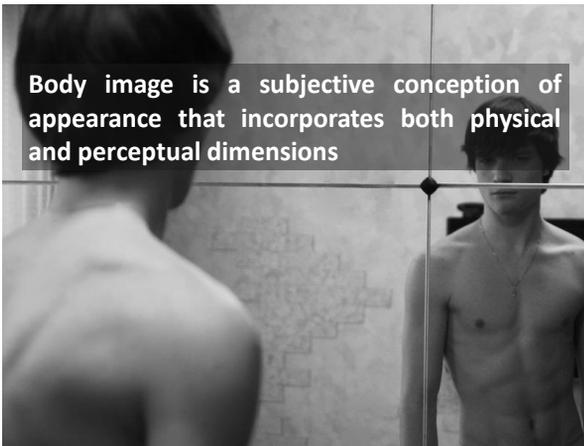
She describes a desire to lose more weight and is fearful of regaining weight. She isn't concerned about her fatigue or other consequences of her weight loss.



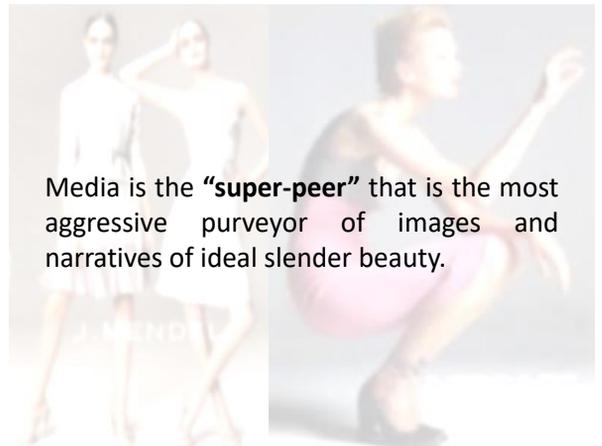
On exam, she is orthostatic, has cool extremities, and appears pale. Her resting pulse is 45.

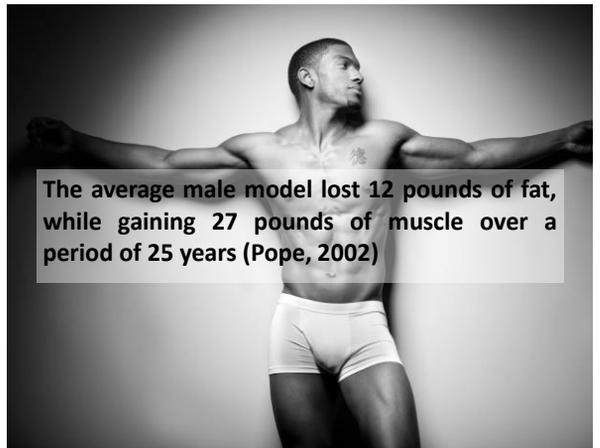


Body image is a subjective conception of appearance that incorporates both physical and perceptual dimensions



Media is the “super-peer” that is the most aggressive purveyor of images and narratives of ideal slender beauty.







Between 1964 and 1998 action figures have become more muscular with smaller waists and larger chests and biceps (Pope, 2002)



Ana Boot Camp

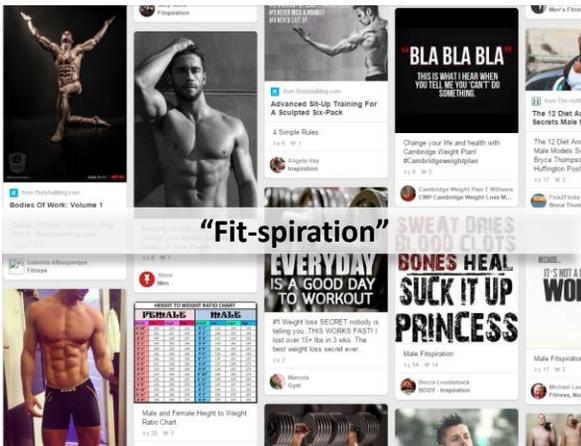
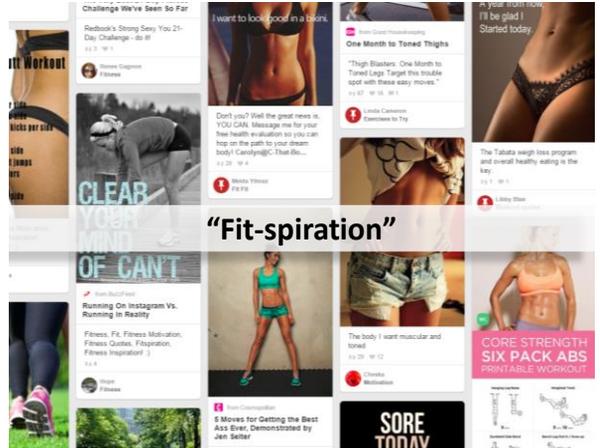
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- Ana Facts
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"Pro-Ana" and "Thin-spiration" Websites

Male Thinspiration



"Thin-spiration" Websites



42% of 6-9 year old girls want to be thinner
 9yo start to experiment with dieting
 \$33 Billion spent on dieting and diet-related products each year



What is Disordered Eating?

Restriction

Fad diets

Bingeing

Purging

Other behavioral responses to intake

Eating in secret

Abusing medications

[Disordered exercise behaviors]



It's a Spectrum

Disordered Eating

2,451 Norwegian students aged 15-17 years

Prevalence of disordered eating was **64.3%** among girls and **45.0%** among boys ($p < 0.001$)

A **smaller girls-boys ratio** than expected

Torstveit et al, PLoS One, 2015, PMID 25825877

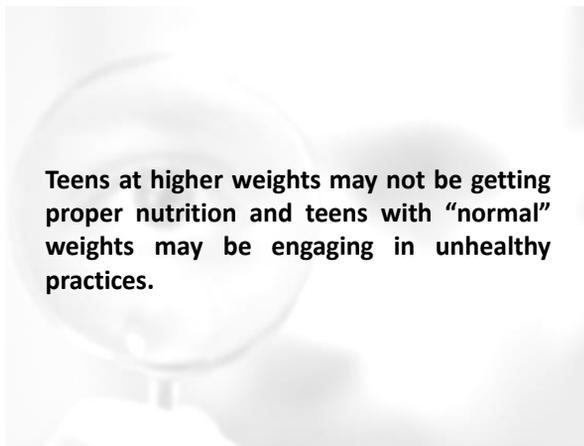
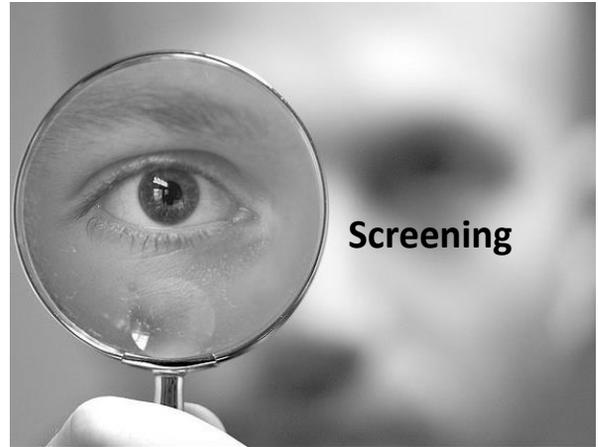
Epidemiology - Boys

10% of eating disorder pts are male (Wolf, 1991)

Male patients are often overlooked and **stigma** decreases help-seeking (Griffiths et al., 2015)

Real figure could be up to **25%** (Hudson et al., 2007)

- Community (25%) vs. treatment-seeking (10%) (Sweeting et al., 2015)



SCOFF

1. Do you make yourself **Sick** because you feel uncomfortably full?
2. Do you worry you have lost **Control** over how much you eat?
3. Have you recently lost > **One stone** (6.3 kg or 14 lb) in a 3-mo period?
4. Do you believe yourself to be **Fat** when others say you are too thin?
5. Would you say that **Food** dominates your life?





Shape and weight concerns

Do you think you're too big, too small, or in between?

How do you feel about your body shape/size?

Do you constantly think about your weight?

Does food control your life?



Eating and Exercise behaviors

Have you been doing anything to try to lose or gain weight?

Do any of your friends do anything to lose or gain weight?

Are you doing anything to change the shape or size of your body?



Anorexia Nervosa



Bulimia Nervosa



Avoidant/restrictive Food Intake Disorder

Binge Eating Disorder



Pica

Rumination disorder




Anorexia Nervosa

Caloric restriction resulting in significantly low body weight

Fear of wt gain and/or persistent behaviors that prevent wt gain

Body image disturbance and undue influence on self-worth

Subtypes: restricting & binge/purge

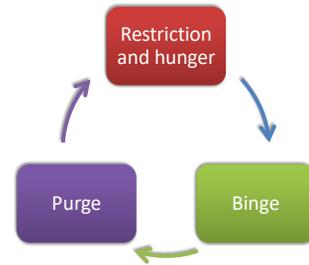
Bulimia Nervosa

Binge eating; loss of control

Inappropriate compensatory behaviors (vomiting, laxatives, diuretics, exercise, fasting/dieting)

At least 1x/wk for 3 mos

Dissatisfaction with body shape and weight



Binge Eating Disorder

Eating an unusually large amount of food with a sense of lack of control without compensation

3 of 5

- Eating much more rapidly than normal
- Eating until uncomfortably full
- Eating large amounts when not hungry
- Eating alone because of being embarrassed
- Feeling disgusted with self, depressed, or very guilty

1x/week for at least 3 months

Avoidant/Restrictive Food Intake Disorder

Eating or feeding disturbance (e.g., lack of interest; avoidance due to sensory characteristics; concern about aversive consequences) with failure to meet nutritional needs associated with one or more of:

- Significant weight loss (or failure to grow normally)
- Significant nutritional deficiency
- Dependence on enteral feeding or PO supplements
- Marked interference with psychosocial functioning

Other Specified Feeding or Eating Disorders

Includes atypical anorexia, subthreshold disorders, night eating syndrome, sleep related eating disorder, and purging disorder

Muscle Dysmorphia / Bigorexia / Reverse Anorexia

Anorexia athletica / Hypergymnasia



AN Management

Nutritional rehabilitation and psychotherapy

Monitoring for complications and safety

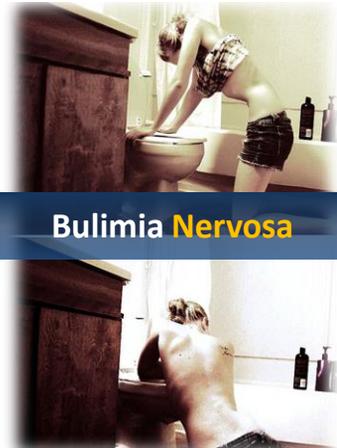
BN Management

Nutritional rehabilitation

Psychotherapy

Pharmacotherapy





Complications depend upon the method and frequency of purging

Vomiting **Complications**

Stomatitis, cheilosis

Periodontal disease, caries

Sialadenosis



**Esophagitis, erosions,
ulcers, MW tears**

Strictures and dysphagia

Boerhaave's



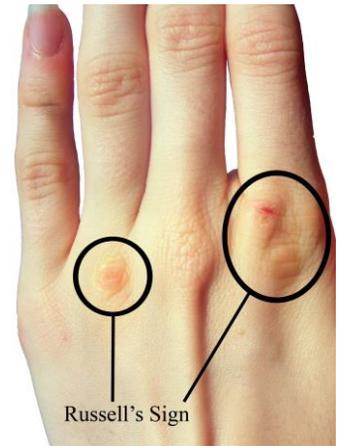
Electrolyte disturbance

**Dehydration and contraction
alkalosis**

Aspiration



**Abrasions/calluses
on dorsum of
hand and knuckles**





Ipecac can be toxic

- Muscle weakness, pain, and stiffness
- Emetine accumulates in cardiac muscle - cardiomyopathy



- Laxatives ineffective for weight loss**
- Stool thin layer chromatography**
- Reflex constipation**
- Melanosus coli**
- Rectal prolapse**
- Hypovolemia; hyperchloremic metabolic acidosis**



Diuretics also ineffective for weight loss
– dehydration stimulates RAA system

Electrolyte abnormalities

Pseudo-Bartter syndrome



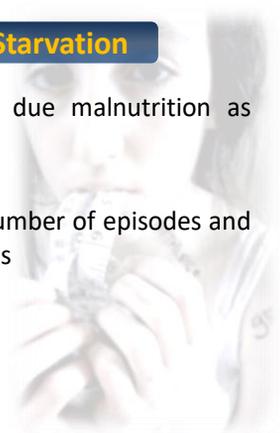
Anorexia Nervosa



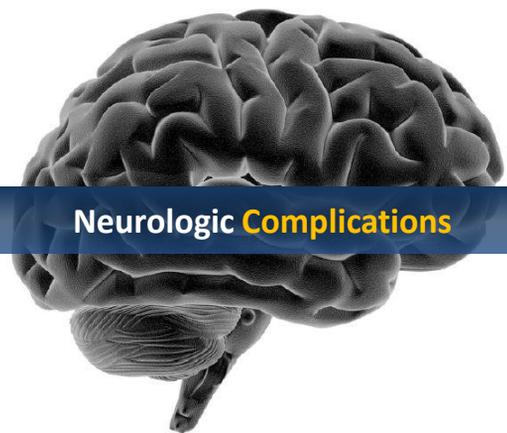
Effects of Starvation

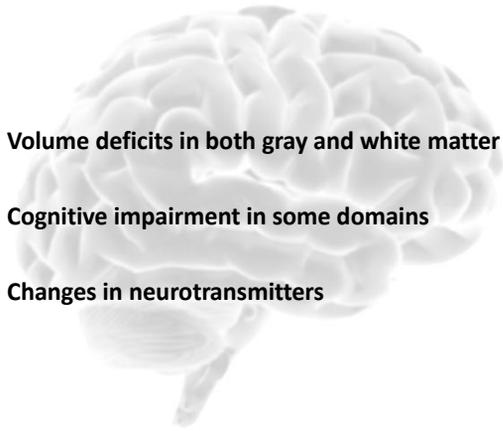
Medical complications due malnutrition as well as refeeding

Length, severity, and number of episodes and timing of those episodes



Neurologic Complications

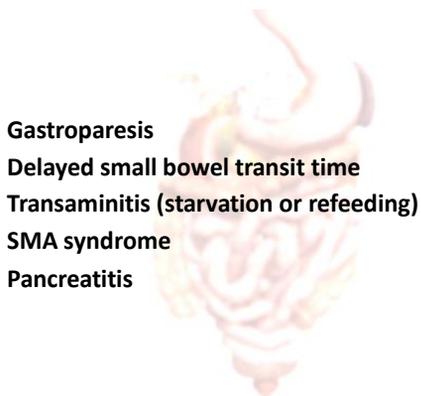




Volume deficits in both gray and white matter
Cognitive impairment in some domains
Changes in neurotransmitters



Gastrointestinal Complications



Gastroparesis
Delayed small bowel transit time
Transaminitis (starvation or refeeding)
SMA syndrome
Pancreatitis



Endocrine Complications

Hypothyroidism, euthyroid sick syndrome

Hypercortisolism

GH resistance, low IGF-1

Variable vasopressin secretion (DI or SIADH)

Hypoglycemia

When Being Varsity-Fit Masks an Eating Disorder The New York Times



FOR a runner, Alex DeVigny wasn't all that skinny on the day that she won a state track title in 2003. At 17, she was 5-foot-8 and weighed 125 pounds.

Few people watching her run the 3,000 meters in 10 minutes 53 seconds would have guessed that she had had symptoms of an eating disorder since age 9 and that she had yet to start menstruating. Her coach didn't know. The college recruiters certainly did not know.



Photo courtesy of The New York Times
LOOKING FOR CLUES Alex DeVigny, above, was a state track champion in Racine, Wis.

She was never going to run for those colleges. The summer after she won the title, Ms. DeVigny, from Racine, Wis., began to run even harder and eat even less. When she came out for cross-country in the fall, she looked frail and underweight. Her coach was concerned enough to prevent her from competing in several meets, but he allowed her to do two-thirds of her training. He never asked about her



Hypogonadotropic hypogonadism

Osteopenia/Osteoporosis

- nutritional deficiencies, low estrogen, GH resistance, hypercortisolemia

May ovulate despite being amenorrheic

- higher rate of pregnancy complications



Cardiovascular Complications

Myocardial mass loss, decreased cardiac output

Conduction abnormalities, dysrhythmias

Pericardial effusion

CHF during refeeding

MVP

Bradycardia

Orthostatic changes

Additional **Sequelae**

Growth and development

- Young adolescents/pre-menarcheal pts

Renal

- Reduced GFR and problems concentrating urine
- K, Mg, Phos are occasionally depleted

Additional **Sequelae**

Pulmonary

- Wasting of respiratory muscles, decreased pulmonary capacity
- Enlargement of peripheral lung units without alveolar septal destruction

Heme

- Hypoplastic/aplastic bone marrow, gelatinous degeneration with serous fat atrophy

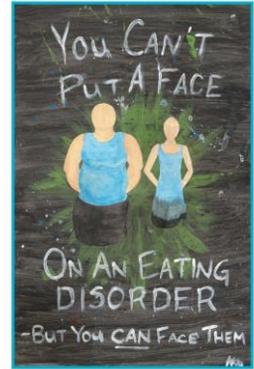
Levels of **Care**

Levels of Care

- Medical inpatient
- Eating disorders inpatient
- Residential treatment
- Partial hospitalization
- Intensive outpatient
- Outpatient

Outcomes

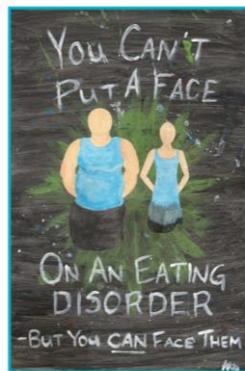
50% good
 25% intermediate
 25% poor



Celebrating our Natural Sizes Célébrons les tailles naturelles
 Eating Disorder Awareness Month
 Ontario's Regional Eating Disorder Program
 41 Chesham Terrace, Suite 404, Guelph, ON N1E 5Y1
 Tel: (519) 763-3300 Fax: (519) 763-3304
 #EatingDisorders Ontario Health Services

Outcomes

All cause mortality **6x greater** than general population
Highest lifetime mortality of any psychiatric illness



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New "Diagnoses"

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'Pregorexia': Extreme dieting while pregnant

By Kelly Wallace, CNN
Updated 3:13 PM ET, Wed November 20, 2013



Both celebrity moms and regular women can experience pressure to slim down after giving birth.

© Steve Klaskob/CNN

Mom-to-be Maggie Baumann knew she most definitely

CNN Parents

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Replace the 'sex talk' with the 'tech talk'?
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LIVING BODY IMAGE

'Bigorexia' and the Male Quest For More Muscle

James S. Fall June 13, 2014



Men working out

Much has been made of the decreased effect of gravity on female movie stars in recent decades, and how this sets an impossible standard for girls, leading to body image issues.

But a similar effect has taken place with men, with the scale moving in the opposite direction.

Charlton Heston spent most of the 1968 version of *Planet of the Apes* shirtless, but such a torso would never suffice for today's action hero. That's why the 2001 reboot had former underwear model Mark Wahlberg as the lead.

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By BIGAD SHABAN CBS NEWS February 25, 2015, 1:01 PM

Orthorexia: When healthy eating becomes an unhealthy obsession

32 Comments / 1.5K Shares / 233 Tweets / Email

Experts say they're concerned about a growing number of cases where healthy eating, taken to the extreme, turns into an unhealthy obsession. It's called orthorexia, and it can have dangerous consequences.

Jordan Younger, a 24-year-old food blogger, has struggled with the condition. She told CBS News that what started out as a health-oriented vegan lifestyle went too far.

"I would embark on these 10 to 30 day juice cleanses where I would only be drinking vegetable juice," she said. "That's not veganism — that's just not even eating."

Younger says she lost 25 pounds in two months, cutting far more than just meat and animal products out of her vegan diet.

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Diabulimia: The Dangerous Way Diabetics Drop Pounds

March 8, 2013
By GILLIAN MOHNEY via WORLD NEWS



Erin Williams was diagnosed with type 1 diabetes at age 11.

At age 14, Erin Williams was tired of medicine. Williams was diagnosed as a type 1 diabetic at age 11, and after three years of enduring a never-ending regimen of insulin shots and strict diet restrictions, she was frustrated.

Embarrassed by her disease, she kept it a secret from everyone but her closest family and friends. At birthday parties, she made up excuses about why she couldn't have soda or cake. When a classmate saw her drinking juice boxes in the nurses' office, she endured weeks of being called the "juice box thief" rather than just tell her classmates she had low blood sugar because of diabetes.

The Atlantic SUBSCRIBE SEARCH MENU

HEALTH

Road to 'Drunkorexia'

The downsides of the weight-conscious alcohol boom

JACQUEE CRIST MAR 27, 2013



In a culture that's still obsessed with dieting, the U.S. weight loss industry is worth around \$60 billion and growing. In recent years, there's been an important addition to that market: alcoholic beverage companies. Marketing increasingly plays to consumers' insecurities by perpetuating the myth that we can -- and



The intensity of their distress overrides primal instincts



Coping and control
are central



Shame
is common



While most illnesses are **egodystonic**,
eating disorders are often **egosyntonic**



Eating disorders are therefore
characterized by secrecy



count·er·trans·fer·ence

\,kaunt-ər-tran(t)s-'fər-ən(t)s, -'tran(t)s-(,)\

the complex of feelings of a clinician
toward the patient

Acute clinical presentations are
the perfect storm



Key Points

1. Disordered eating is a spectrum and proactive screening and management is important.
2. Medical complications are varied and typically drive level of care decisions.
3. Helping eating disorders patients requires a deep understanding of their experiences in addition to technical know-how.



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Questions?

