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MONTANA ACADEMY
of
PHYSICIAN'S ASSISTANTS
CME
CONFERENCE
August 3, 2012

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EATING DISORDERS

MANIFESTATIONS
OF A
NEUROENDOCRINE SYNDROME

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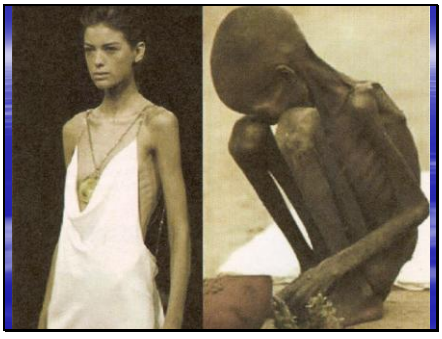

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DIAGNOSTIC CRITERIA OF ANOREXIA NERVOSA

- A) Refusal to maintain body weight at or above a minimally normal weight for age and height (<85% normal BMI)
- B) Intense fear of gaining weight or becoming fat, even though underweight
- C) Disturbance in the way in which one's body weight or shape is experienced
- D) In postmenarcheal females, amenorrhea (the absence of at least three consecutive menstrual cycles

- Types: Restricting
  Binge-Eating/Purging type

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Diagnostic Criteria of Bulimia Nervosa

- A) Recurrent episodes of binge eating
  1)eating, within a 2 hour period, an amount of food that is definitely larger than most people would eat in the same time
  2)a sense of lack of control over eating during the episode
- B) Recurrent inappropriate compensatory behavior in order to prevent weight gain
  1)self-induced vomiting
  2)misuse of laxatives, diuretics, emetics, enemas, or other medications
  3)fasting
  4)excessive exercise: "exercise bulimia", "activity disorder", "compulsive exercise"
- C) Binging and purging both occur, on average, at least twice a week for 3 months
- D) Self evaluation is unduly influenced by body shape and weight
- E) The disturbance does not occur exclusively during episodes of Anorexia

- Types:
  Purging: use of vomiting, laxatives and/or medications
  Non-purging: fasting or exercise only

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Residual Diagnostic Criteria for Eating Disorders

- A) Eating Disorder Not Otherwise Specified "EDNOS"
  (40% of all eating disorders)
  1) All criteria met for AN except one, i.e.:
  regular menses; significant weight loss, but normal weight; no professed drive for thinness or body image distortion
  2) All criteria met for BN except that: binge purge cycles less often than criteria; use of purge after eating small amounts of food; chewing and spitting out, but not swallowing large amounts of food
- B) Binge Eating Disorder
- C) Night Eating Syndrome

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Disordered Feeding/Eating not included in "Eating Disorders"

- Obesity: imbalanced nutrition, comfort eating, creeping obesity, metabolic variations and disorders
- Pica: repeated eating of non-nutritive substances for at least 1 month
- Rumination: repeated regurgitation and re-chewing of food for at least one month
- Feeding Disorder of Infancy or Early Childhood: failure to eat adequately, or significant weight loss within 1 month
- Culturally sanctioned eating practices

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PARADIGMS OF EATING DISORDERS

- Historical review: three millennia of shifting views
- Public opinion: misunderstood, misrepresented, maligned
- Professional countertransference:
- MHP community predisposition

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ETIOLOGY OF EATING DISORDERS

"Some men are born to greatness, some men arise to greatness, still others have it thrust upon them". William Shakespeare

Evidence base:

- Genetic contribution: "Genetics loads the gun; external factors pull the trigger". Craig Johnson MD, Laureate Institute, Tulsa, Ok.
- Behaviorally created neurohormonal dysfunction. Ancel Keyes, WW II study; Berg and Sodersten, Karolinska Institute
- Familial influence: causative vs. reactive?
- Neuropsychological factors: co-occurring conditions, predisposing temperment, dysfunctioning brain regions
- Cultural triggers: relational, societal, media influences-and bad luck
- Addiction Model

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ETIOLOGY of EATING DISORDERS

- Genetic Contribution:
  - Adopted Twin Studies:
    - Identical: 55% concordance
    - Fraternal: 27%
    - First Order Relatives:17%
    - General Population: 9%

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ETIOLOGY CONTINUED
Familial Influence

- Progression of theories:
  - Sexual, physical, emotional abuse
  - E.D. family dynamics:
    - Abusive family
    - Chaotic family
    - Perfect Family
  - Reactive vs causative family dynamics
    - Maudsley family model

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Etiology continued
EFFECTS of STARVATION

- Animal migrations: food restriction is common across species
- "Minnesota Study"
  - Ancel Keys, 1950
- Karolinska Institute
  - "Mandometer"
    - Bergh & Sodersten
- Animal Studies: Hypothalamus ablation in rats
  - Lateral ablation:
    - must be force fed
  - Ventromedial ablation:
    - will eat themselves to death

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Etiology continued
ADAPTED TO FLEE FAMINE HYPOTHESIS AFFH

- Literally dozens of animals refuse food when breeding or migrating
- Many animals become hyperactive when food is unavailable
- Low body weight corresponds with AN-like behavior in many animals: hyperactivity and satiety
- High heritability suggest natural selection
- Primitive cultures have oral traditions regarding migration/ED behavior co-occurrence

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Comorbidities as causation

- Broad variation in statistics:
  - ED's and Anxiety Spectrum: 11-25%
    - AN:37%, BN:3%
  - ED's and CD: 5-40%
    - AN:0-3%,BN: 20-50%
  - ED's and Depression: 33-50%
    - AN: 68%, BN: 18-30%
  - ED's and Personality Disorders: 0-58%

Conclusion: inconclusive statistics; best guess is that comorbidities may be triggers-certainly are complicating factors

We do know that AN are more obsessional and perfectionstic, BN are more impulsive and unstable, BED are more avoidant and anxious

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Eating Disorders as Addictions

- Comorbidities:
- Diagnostic Criteria of Addiction:
  - Craving
  - Tolerance
  - Withdrawal
- Addiction treatment model outcomes with eating disorders unimpressive

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Therapeutic Approach

Setting the stage: E.D. patients are often encephalopathic, shameful, defensive and elusive, so accurate reporting can be hard to elicit.

- Humor and self deprecation can open doors.
- Relationship building: create a conversation.
- Blend questions into a broader context: "How is it being a teenager these days? You have a different language (texting, IM etc.), different expectations from adults, parents, boys than our generation".
- "And the media really sets standards for you: telling you what to wear, how to act, what to eat and how to look." "Does that ever get to you?"

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Diagnostic tool

- SCOFF Questionnaire:
  - Sick (Do you make yourself sick because you are uncomfortably full?)
  - Control (Do you worry that you have lost control of how much you eat?)
  - One (stone= 14 lbs) (Have you lost more than one stone in a 3 month period?)
  - Fat (Do you believe yourself to be fat when others say you are too thin?)
  - Food (Would you say that food dominates your life?)
- A single "yes" indicates caution/concern, two "yes" answers indicates probability of an eating disorder
- 100% specificity
- 87.5% sensitivity

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PHYSICAL ASSESSMENT

- Most AN's cachexic; BN's normal to slightly overweight; BED and NES often overweight or obese
- Cognitive impairment often masked: MSE wnl except judgement/insight
- Lanugo hair
- Rhett's sign
- Parotitis
- Subconjunctival hemmorhage
- Blanching
- GERD
- Laboratory abnormalities: electrolyte disturbances, elevated serum amylase

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MEDICAL INTERVENTIONS overview: Food as Medicine

- Malnourishment affects all organ systems, therefore, effective intervention requires global assessment and treatment

1) Work to restore homeostasis
(getting the body to work again)

2) Anticipate and address compensated and non-compensated threats and adaptations

i.e. anorexic may have normal cognitions one day and be encephalopathic the next; watch for deficits in executive functions
bulimic may have normal K+ while purging regularly, then have severe hypokalemia after the next purge

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MEDICAL INTERVENTIONS overview: Food as Medicine

- Cardiovascular 'intc': low voltage, elevated QTc (pre-arrhythmic state), myocardial wall atrophy, bradycardia, hypotension, poor blanching, poor stroke volume, orthostatic hypotension, poor cardiac compensation with exercise, arrhythmias, sudden death=500/year, (changes in electrolytes, hydration, medication-especially antidepressants-all effect QTc and layer risks) Tx: sports drinks, supportive nursing care, careful monitoring, ACLS/heroic care as indicated
- Thermoregulation compromise: lanugo hair Tx: nutritional rehabilitation, warming rooms, warmed blankets
- Refeeding Syndrome: inability to absorb nutrients effectively, resulting in edema, CHF, PE, hypophosphotemia (causing possible cardiac complications, seizures) Tx: sodium restriction, low normal protein, supportive measures and careful monitoring for symptoms - "Start low and go slow" when refeeding
- Endocrine-result of downregulating adaptation: Euthyroid "sick" syndrome-often misdxd and pt. placed on thyroid hormone, osteopoenia/osteoporosis, amenorrhea (nl adaptation to hypoestrogenemia) Tx: refeeding/renourishing (no tx for osteoporosis)

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CNS CONSEQUENCES of CALORIC RESTRICTION

- Autonomic dysfunctions: BP/TPR, diaphoresis, chills, gooseflesh, shivering
- Gross motor deficits: standing, walking, balancing
- Fine motor deficits: writing, proprioception
- Cerebral cortical atrophy: cognitive deficits, ataxia, obtunded, manipulative behavior (as they try to cope with ego-dystonic ruminations and/or "civil disobedience")
- Body image distortions*
- Treatment: Nurturant authoritative professional care, repeated psycho-educational reassurances, nutritional rehabilitation

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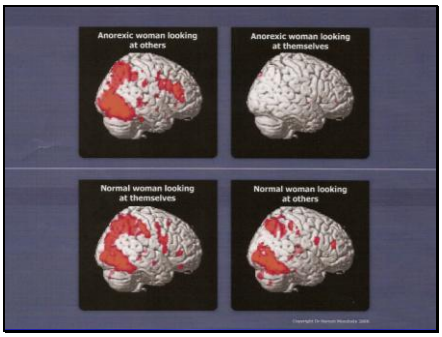

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CALORIC RESTRICTION COMPLICATIONS continued

- GI Consequences: Dysmotility-the body's executive function

  UGI: dyspepsia, early satiety, fullness, bloating

  LGI: flatulence, distention, cramping, constipation (IBS?)

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MALNUTRITION AND WEIGHT LOSS CONSEQUENCES

- Delayed gastric emptying (42%>60 min.)

Tx: Limit raw fibrous food, post prandial warming room, walks after meals (if not debilitated), proton pump inhibitors, and ultimately nutritional rehabilitation and patience. For those with IBS symptoms: psycho-education and hypnosis.

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MALNUTRITION AND WEIGHT LOSS CONSEQUENCES continued

Gastroparesis-gastric dilatation

Tx: UGI, proton pump inhibitors, jejunal feedings, electric gastric pacing, careful use of liquid supplements (can cause bezoars)

Superior Mesenteric Artery Syndrome (especially in anorexia, as no fat to protect the duodenum):

Sx: early satiety, postprandial fullness and distention

Tx: jejunal feeding

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Malnutrition and weight loss consequences (continued)

- Reflex hypofunctioning colon
  - Dx: clinical imaging
  - Tx: Bowel protocol:
    - Patience
    - Force fluids
    - Judicious use of bulking agents
    - Stool softeners: Colace
    - Osmotic agents: Miralax
    - Promotility agents: Zelnorm (off label)
    - Avoid stimulants and suppositories

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Malnutrition and weight loss consequences (continued)

- Obstipation/Intestinal Obstruction: URGENT/EMERGENT! Can happen O/P, as pts are notoriously poor historians, or they are unable tolerate oral refeedings, but have been stoic

  Dx: P.E., KUB

  Tx: Oral stimulant laxatives, deep enemas, Golytely (administer in a tube feeding if necessary), manual disimpaction (best done in E.R. due to risk of perforation)

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CONSEQUENCES continued

- Type 1 and 2 diabetes (and dual diabetes) in bulimia shown to cause advanced diabetic retinopathy
- Substance misuse/abuse: insulin, salt, water(weigh-in technique/ intoxication), caffeine, condiments, sweetener, ipecac, stimulant laxatives, Xenical

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BINGE-PURGE CONSEQUENCES

- SUDDEN DEATH
- Binge: Weight gain, elevated cholesterol and triglycerides
- Cardiovascular: alkalosis, low chloride, potassium, sodium

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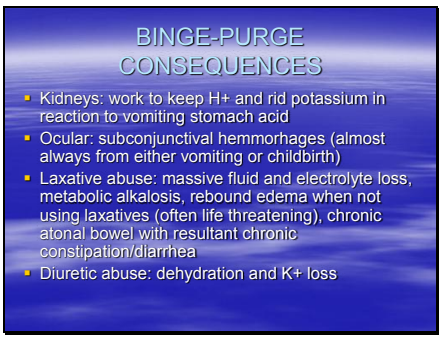

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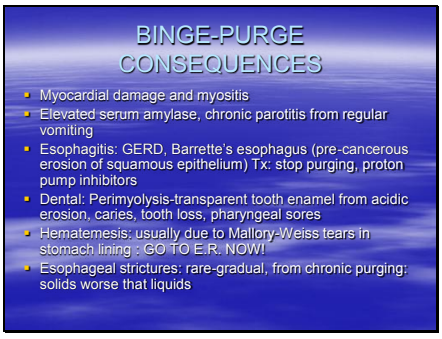

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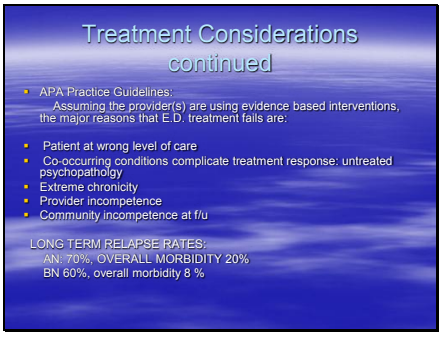

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LEVEL OF CARE CRITERIA
Am. Journal of Psychiatry

One: Outpatient
Two: Intensive Outpatient
Three: Partial Hospitalization (Full Day O/P)
Four: Residential Treatment Center
Five: Inpatient Hospitalization

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Level of Care Criteria continued

- Ten Characteristics to Consider:

1. Medical Complications: need for monitoring
2. Suicidality: intent and/or plan
3. Weight: as % of healthy body weight (for children, determining factor is rate of wt. loss)
4. Motivation, cooperativeness, insight, ability to control obsessionality
5. Comorbid disorders (substance abuse, depression, anxiety, axis II)
6. Structure needed for eating/gaining weight
7. Impairment and ability to care for self; ability to control exercise
8. Purging behavior (self induced vomiting, laxative/diuretics, ipecac, exercise)
9. Environmental stress
10. Treatment availability/living situation

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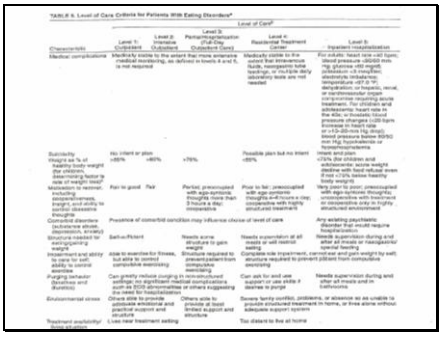

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Multidisciplinary Team Treatment Modalities

- Initial Focus: refeeding, nutritional counseling, medical management and psychosocial restoration (Karolinska Institute, Stockholm-Berg and Sodersten)
- Concomitant/proceeding Psychotherapy: cognitive behavioral, dialectic behavioral, psychoeducational and interpersonal therapies (Fairburn, Linehan, Garner and Garfinkle)
- Family Therapy: Maudsley method
- Body Image work: cognitive behavioral and feminist interventions

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RURAL TREATMENT TEAM

- Primary Health Care Provider: nurturant-authoritative style, competent with complex medical problems, able to set necessary boundaries, has collaborative vision of health care
- RN/RD: nurturant authoritative style, knowledgeable about nutrition/metabolic abnormalities, able to develop meal plans, can address current knowledge about diets, exercise
  Psychotherapist: nurturant authoritative style, good clinical assessment skills, comfortable with ambivalence, uncertainty and feelings of impending doom
- For adolescents: parents/family, certain friends, clergy, school/activities personnel
- For adults: family, certain friends, clergy

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Special Considerations

- Co-occurring disorders:
  - Depressive disorders
  - Anxiety spectrum disorders: OCD vs. obssessionality
  - Substance abuse
  - Trauma: Emotional, physical, and /or sexual abuse

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Internet Resources

- National Eating Disorders Association
  www.nationaleatingdisorders.org
  National Clearing House with much good information for anyone interested in e.d.'s
- Something Fishy
  www.something_fishy.org
  Excellent web site developed by recovered patients with education, referral information as well as an interactive web log

Beware of "PRO-ANA" web sites which promote eating disorders. They encourage eating disordered behavior with "thinspirational" writings, pictures and advice on how to continue the behavior without getting caught

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References and Resources
Patients, families and friends

- Anorexia Nervosa: A Guide to Recovery, Gurze Books, Hall and Ostroff
- Bulimia Nervosa: A Guide to Recovery, Gurze Books, Hall and Ostroff
- Overcoming Binge Eating, Guilford Press, Fairburn
- Surviving An Eating Disorder, Strategies for Family and Friends, HarperCollins, Hall et al.
- The Unofficial Guide to Managing Eating Disorders, Wiley and Sons, Gilbert and Commerford
- Life Without Ed, Guilford Press, Schaefer

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References and Resources
Professional personnel

- The Treatment of Eating Disorders,Guilford Press, Grilo and Mitchell
- Handbook of Treatment for Eating Disorders, Guilford Press, Garner and Garfinkel
- Eating Disorders: A Guide to Medical Care and Complications, Mehler and Andersen
- Diagnostic and Statistical Manual of Mental Disorders, IV-TR
- Eating Disorder Supplement, American Journal of Psychiatry, 1571, January 2000
- Special Issue: Eating Disorders, American Psychologist, April 2007

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