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# **Eating Disorders in children and adolescents**

M Maldonado

- 
- ✿ Anorexia and Bulimia nervosa
  - ✿ Developmental disorders *par excellence*
  - ✿ Typical peak in adolescence, most frequent in girls. Decreasing prevalence with increasing age
  - ✿ Bulimia may follow anorexia
  - ✿ There are prepubertal forms

# ICD 10 Criteria. Anorexia nervosa

- ✿ Body mass index under 17.5 kg/m<sup>2</sup>, or 15% under the normal weight
- ✿ BMI= Weight kg/ (height in m)<sup>2</sup>
- ✿ Weight loss is self induced
- ✿ Distortion in body image”overweight”
- ✿ Alterations in the hypothalamus/pituitary/gonadal axis
- ✿ If prepubertal onset, inhibits pubertal development

# DSM IV Criteria. Anorexia Nervosa

- ✿ Refusal to maintain minimum weight for age (<85% expected weight)
- ✿ Distinct anxiety about gaining weight
- ✿ Distortion in perception of body image and body weight
- ✿ Amenorrhea in postpubertal women

# Dsm iv criteria ctd.

- ✿ RESTRICTIVE TYPE.

- ✿ BULIMIC TYPE (Binge eating/purging)

- ✿ Attempts at losing weight (medicines, vomiting. Almost always preceded by restrictive type in development.

# ICD 10 criteria for bulimia nervosa

- ✿ Persistent preoccupation with eating and attacks of binge eating, with rapid consumption of large amounts of food in a short time
- ✿ Persistent attempts to avoid the effects of eating through various behaviors like self induced vomiting, abuse of laxatives, restrictive diets
- ✿ Morbid fear of becoming overweight
- ✿ Frequently, history of anorexia nervosa



# DSM IV criteria for bulimia nervosa

- ✿ Repeated attacks of overeating/binging
- ✿ Repeated use of strategies to avoid gaining weight
- ✿ Frequency of bingeing attacks and compensatory behavior at least twice a week durin three months
- ✿ Excessive influence of the body apearance and body weight on self esteem
- ✿ Not only during the presence of anorexia nervosa

# Dsm iv bulimia, ctd.

- ✿ **PURGING TYPE** (desperate attempts to reduce weight, like vomiting and buse of laxatives)
- ✿ **NOT PURGING TYPE.** Fasting, intense exercise (e.g. in y ounger patients)



# Obesity

- ✿ Not per se an eating disorder in the strict sense
- ✿ There may be BINGE EATING disorder, or attacks of eating
- ✿ (higher psychiatric comorbidity)
- ✿ Loss of control of eating

# Research criteria for binge eating disorder in dsm iv

- ✿ Repeated episodes of compulsive eating.
- ✿ (eating large amounts in a limited time)
- ✿ Feeling of loss of control over eating during the episode

# Research criteria for binge eating disorder in dsm iv ctd


- ✿ Episodes of compulsive eating at least three of these symptoms:
- ✿ Eating considerably faster than normal
- ✿ Eating until achieving excessive feeling of fullness
- ✿ Eating excessive amounts, when one is not hungry
- ✿ Feelings of revulsion against oneself.  
Depressive feeling or excessive feeling of guilt over eating

# Research criteria for binge eating disorder in dsm iv ctd

- ✿ Conspicuous feelings of sorrow about the overeating
- ✿ The “eating attacks” occur for at least two days in the week for six months
- ✿ The overeating does not occur only in the context of compensatory behaviors like purging, fasting, or excessive exercise, and not only during anorexia or bulimia nervosa

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# Epidemiology

- 
- ✿ The incidence and prevalence of anorexia nervosa is increasing in the group 15-24 years old of girls
  - ✿ Mayo clinic field study: incidence in 15-24 yr old girls is 20 per 100 000 people of this age
  - ✿ (50 per 100 000 of women in their 30's)



# Point prevalence


- ✿ 15-24 yr old girls between 0.3 and 1% (van Hoeken et al, 1988)
- ✿ Life time prevalence , women in their 30's is 1.6%
- ✿ Peak prevalence at 14 years
- ✿ Recent increase in prevalence in 10-14 year old girls. (Lucas et al, 1999)
- ✿ In 5% of patients, it appeared in its early form
- ✿ Ratio female/male is 10 or 12 to 1

# Bulimia nervosa

- ✿ Prevalence all ages 1 to 4% (Fairburn and Beglin, 1990)
- ✿ In adolescents, prevalence 1 to 2%
- ✿ Incidence 12 cases per 100 000/ year
- ✿ In men prevalence 0.2 to 0.3%

# Other prevalence

- ✿ If “partial forms” , not fulfilling all criteria
- ✿ 10 to 15% of female adolescents (Neumar-Sztainer and Hamman, 2000)
- ✿ Rare disorder in “third world countries”
- ✿ Increasing in frequency, perhaps due to globalization
- ✿ Rare in immigrants in industrialized countries
- ✿ Increase prevalence in children of immigrants, acculturation

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# Symptom patterns and comorbidity

# Eating Behavior

- ✿ Early manifestations are often “restrictive” of food intake
- ✿ (slow to eat meals, very small portions, eating in very small pieces, dieting, etc.)
- ✿ Increased amounts of exercise
- ✿ Avoid high calorie foods, candy, fatty.
- ✿ Excessive selectivity
- ✿ Eating “rituals”
- ✿ Skipping lunch or other meal
- ✿ In young, avoidance of liquids

# Behavior

- ✿ Intense and compulsive exercise, jogging, bicycling
- ✿ Other obsessive worries besides the obsessions with weight and body image
- ✿ Weight loss may be quick or slow, the quicker the more somatic changes
- ✿ Some will develop accessory methods to lose weight and bulimic attacks



# Somatic changes. Inspection

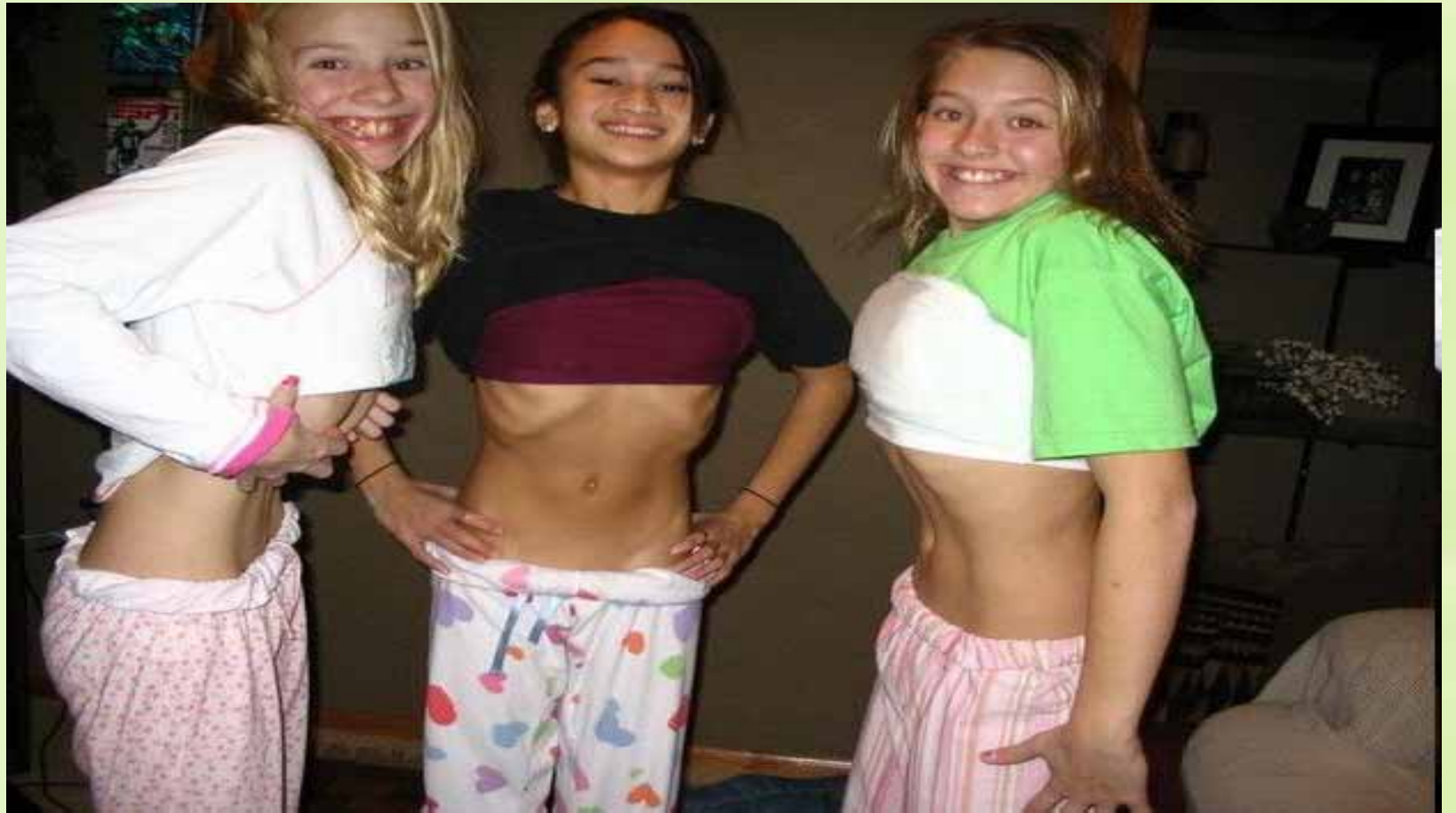
- ✿ Flaky, dry epidermis
- ✿ Appearance of lanugo
- ✿ Acrocyanosis, *cutis marmorata*
- ✿ Loss of hair
- ✿ Hypertrophy salivary glands
- ✿ Tendency to develop cavities
- ✿ Lesions in fingers (repeated self induced vomiting)
- ✿ Low stature or delayed puberty signs

# Somatic changes

- ✿ Leukopenia, anemia, thrombocytopenia
- ✿ Electrolytic changes
- ✿ Increased transaminases, amylase, lipase and urinary analysis
- ✿ Alteration lipid metabolism
- ✿ Diminished albumin
- ✿ Zinc deficiency













# Endocrinological changes

- ✿ Alteration hypothalamic, pituitary, adrenal axis
- ✿ Alteration hypothalamic, pituitary, thyroid axis
- ✿ Alteration hypothalamic, pituitary, gonadal axis e.g. amenorrhea
  
- ✿ Diminished growth hormone
- ✿ Diminished leptin (regulates appetite and metabolism)

# Other changes

- ✿ Pseudoatrophia cerebri in ct scan (due to hypercortisolemia and state of hunger)..or atrophy?
- ✿ Esophagitis
- ✿ Changes in EKG, bradycardia, low blood pressure
- ✿ Complications of laxative abuse, osteomalacia, malabsorption syndrome, constipation, osteoarthropathy
- ✿ Osteoporosis

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# Comorbidity



- ✿ Obsessive compulsive features

- ✿ Other anxiety disturbances

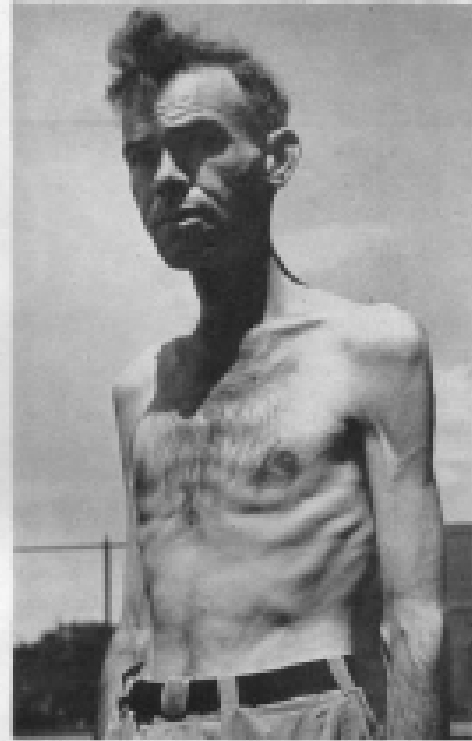
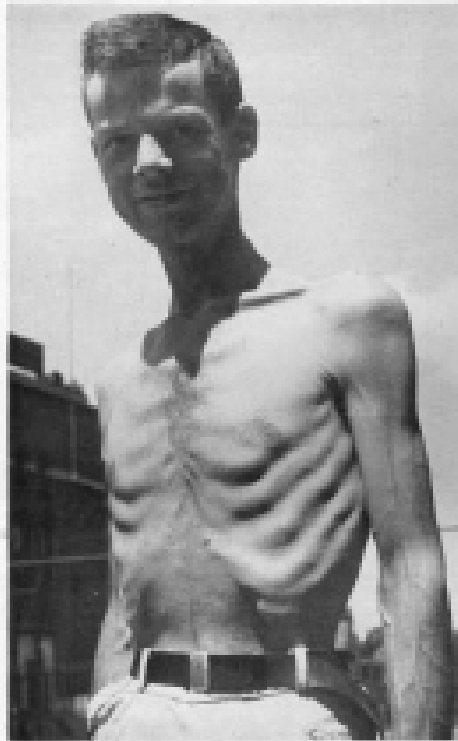
- ✿ Depression

- ✿ Part of the illness or consequence of hunger?

# Obsessive symptoms

- ✿ Interest in order and control
- ✿ Interest in cleanliness, excessive washing, fear of dirt
- ✿ Accumulation, wish to keep things
- ✿ Perfectionism. Wish for symmetry, exactness
- ✿ Fear that bad things will happen
- ✿ Obsession with control
- ✿ Are these a consequence of anorexia?
  - ✿ Minnesota experiment, Keys. Biology of starvation

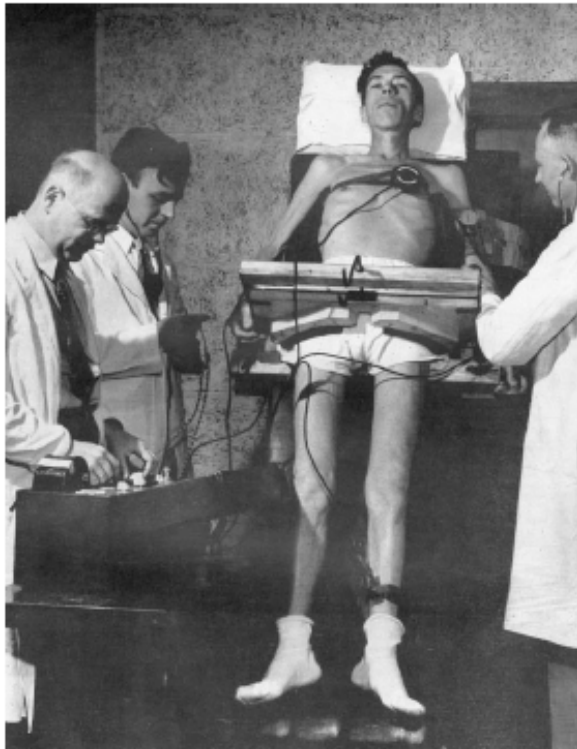




AFTER 100 MONTHS OF STARVATION DIET CONSCIENTIOUS OBJECTOR GEORGE S. MEYER, 26-YEAR-OLD, WHO REFUSES TO REVEAL TRUE AGE IS PICTURED SEPARATELY

## MEN STARVE IN MINNESOTA

CONSCIENTIOUS OBJECTORS VOLUNTEER FOR STRICT HUNGER TESTS TO STUDY EUROPE'S FOOD PROBLEM



riton.org by on November 15, 2008

**FIGURE 3** *Life* magazine photograph of conscientious objector being examined on a tilting table during starvation experiment. July 30, 1945. Volume 19, Number 5, p. 45. Credit: Wallace Kirkland/Time Life Pictures/Getty Images.

# Anxiety symptoms (40-80%)

- ✿ Most frequent, Social phobia (50-60%)
- ✿ Simple phobia
- ✿ Panic disorder with or without agoraphobia
- ✿ Generalized anxiety disorder
- ✿ Premorbid, Comorbid or consequence of starvation? All possible

# Depressive symptoms

- ✿ Typically coexist with bulimia and anorexia
- ✿ Loss of hope, feelings of guilt
- ✿ Poor self esteem
- ✿ Diminished vitality
- ✿ Highest morbidity major depressive disorder


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# Etiology and Pathogenesis

# Etiology and pathogenesis

- ✿ Biological factors
- ✿ Sociocultural factors
- ✿ Family Factors
- ✿ Sexual abuse
- ✿ Multietiological model




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# Diagnosis and differential diagnosis

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# Treatment and Prevention



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## Clinical course and prognosis