Chapter 15: Conditions and Interventions

Overweight and Obesity

- the prevalence of overweight and obesity among adolescents has nearly doubled during the past two decades

- Environmental factors, or interactions between genetic and environmental factors, are the most likely causes of the dramatic rise in overweight and obesity.

Overweight and Obesity

- **Risk factors :**
  - having at least one overweight parent;
  - coming from a low-income family;
  - Being of African American, Hispanic, or American Indian/Native Alaskan race/ethnicity;
  - being diagnosed with a chronic or disabling condition that limits mobility
  - Physical inactivity
  - High caloric/fat/fat diet

Assessment

1. Weight status among adolescents should be assessed by calculating body mass index (BMI)

2. BMI values are compared to age- and gender-appropriate percentiles to determine the appropriateness of the individual's weight for height . Why ????
3. Interpret the percentiles

BMI values greater than the 85th but lower than 95th	Overweight
More than 95th	**obese**

- 90% of overweight adolescents can be expected to remain overweight into adulthood

Health Implications of Adolescent Overweight and Obesity

- Hypertension
- Dyslipidemia
- insulin resistance
- type 2 diabetes mellitus
- sleep apnea and other hypoventilation disorders
- orthopedic problems
- hepatic diseases
- body image disturbances
- lowered self-esteem
- Low Cardio-respiratory fitness

Treatment of adolescents obesity

- staged care process based on:
  - BMI
  - co-morbid conditions
  - age
  - progress with previous stages of treatment

- Adolescents advance through the stages based on:
  - age
  - biological development
  - presence of co-morbid conditions
  - Success with previous stages of treatment

Stage 1: Prevention Plus

- Adolescents with BMI of ≥85th but <95th percentile may start out in Stage 1 if they do not exhibit significant co-morbid conditions and/or have not completed their adolescent growth spurt.
- basic nutrition and physical activity guidance
  - 5 servings of FV
  - Limit sweetened beverages
  - Limit screen time to <2 hrs
  - 60 minutes physical activity
  - Breakfast
  - Eating wit family 5 times/week , few times eating out

Stage 2: Structured Weight Management

- addresses the same behaviors as Stage 1, but does so in a more structured manner

- Monitoring of food and nutrition behaviors by the adolescent and/or their parent(s) is a key component of this stage

Stage 2: Structured Weight Management

- All of the goals of Stage 1 should be reinforced, but several are modified in Stage 2.
  - Screen time is limited to < 1 hour per day
  - a meal plan is introduced to emphasize nutrient-dense food choices while minimizing energy-dense foods.
  - Journals or log books may be provided for monitoring target behaviors.
  - Achievement of goals should be rewarded with **nonfood items** such as new clothing or jewelry or tickets to a concert or event.

Stage 3: Comprehensive Multidisciplinary Intervention

- targets the same behavioral goals as Stage 2, but does so in a more structured, multidisciplinary format with more frequent client contact
- by a team of healthcare professionals
- detailed eating and physical activity plan that is designed to lead to negative caloric balance
- Weekly visits

Stage 4: Tertiary Care Intervention

- is appropriate with severely obese teens or those who have significant, chronic co-morbid conditions that necessitate intensive intervention
- high level of commitment required

- In addition to diet and activity counseling and behavior modification
- More intensive treatments such as meal replacement, a very-low energy diet, medication, and surgery may be implemented.

Cumulative team involvement

Level 4: Tertiary care intervention

- Care coordinator
- Paediatric specialist physician
- Mental health specialist
- Surgeon

Levels 1-3, plus
- Medications
- Highly structured dietary programme
- Consider bariatric surgery

Level 3: Comprehensive MDT intervention

- Child obesity specialist counsellor (e.g. social worker, psychologist or nurse specialist)
- Registered dietitian
- Exercise specialist

Levels 1-2, plus
- Structured physical activity
- Formal dietary programme

Level 2: Structured weight management

- Primary care allied health professionals

Level 1, plus
- Meal and snack structure
- Attention to energy density

Level 1: Initial intervention

- Parents and patients
- Primary care physician

- 5 x fruit/veg per day
- Reduced sugary beverages
- 2 h screen time
- 1 h physical activity

Patient journey

Weight loss medications

- There are currently only one medication that have been FDA-approved for use by adolescents:
- orlistat, an enteric lipase inhibitor that causes fat malabsorption

- approved for adolescents >12 years of age

- side effects include: steatorrhea, flatulence, fecal incontinence, and fat-soluble vitamin deficiencies

Metformin

- a drug commonly used to address insulin Resistance and diabetes, is often used as an off-label (non-FDA approved) treatment for obesity in youth over 10 years of age.
  - reduces hepatic glucose production
  - Reduces glucose absorption by the intestines
  - increases insulin sensitivity
  - inhibits fat cell formation
  - may reduce food intake
- Data from clinical trials suggests that metformin improves weight loss and glucose control over lifestyle changes alone

Bariatric Surgery (read only)

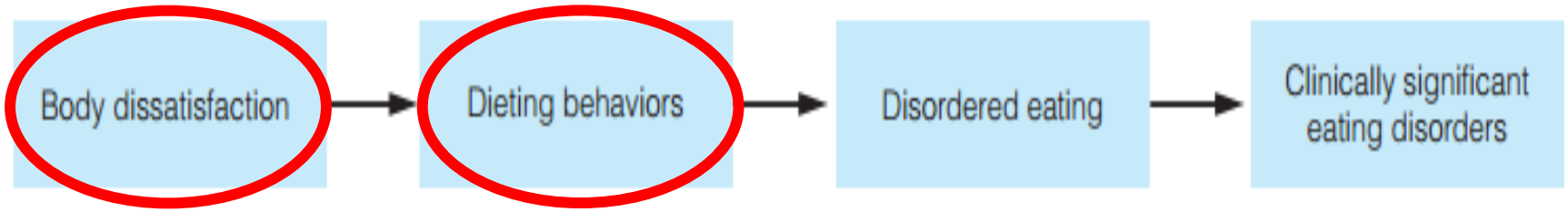
TABLE 15.3 Recommendations for consideration of bariatric surgery in adolescents

- Failure to obtain adequate weight loss after minimum of 6 months of intensive weight loss program participation.
- SMR/Tanner is at stage IV or higher or 95% of adult physical maturity.
- BMI ≥35 with major medical co-morbidities or ≥40 with mild comorbidities.
- Strong indications for bariatric surgery in adolescents include major comorbidities, including:
  - type 2 diabetes
  - moderate to severe obstructive sleep apnea
  - Nonalcoholic fatty liver disease
  - Pseudotumor cerebri
- Mild comorbid conditions that may indicate a need for bariatric surgery include:
  - mild obstructive sleep apnea
  - mild nonalcoholic fatty liver disease
  - hypertension
  - dyslipidemia
  - significantly impaired quality of life
- Candidate participates in psychological and medical counseling before surgery with agreement to continue counseling after surgery.
- Candidate must have adequate support of family and a home environment conducive to long-term dietary change.
- Candidate has the capability to follow medical nutrition therapy protocol after surgery.
- Candidate agrees to prevent pregnancy for at least 1 year after surgery.
- Roux-en-Y gastric bypass should be considered safe and effective.
- Adjustable gastric banding and laparoscopic sleeve gastrectomy should be considered investigative and are not currently approved for use among adolescents in the United States by the FDA.
- Biliopancreatic diversion and duodenal switch surgical procedures are not recommended in adolescents due to the risk of malnutrition and potential effects on growth, development, and reproductive outcomes.

Dieting, Disordered Eating, and Eating Disorders

- Ranging from mild dissatisfaction with one's body shape to serious eating disorders such as:
  - ***anorexia nervosa***
  - ***Bulimia nervosa***
  - ***binge-eating disorder***

Illustration 15.3 The continuum of weight-related concerns and disorders.



Dieting Behaviors

- National data suggest that 60% of female and 30% of male adolescents have dieted in the past month to lose weight

- The prevalence of dieting drops slightly with age among males but increases with age among females

Dieting Behaviors

- Dieting and the use of unhealthy weight control behaviors may also place adolescents at increased likelihood of being overweight in the future

- Effective nutrition messages aimed at adolescents should focus on making healthy lifestyle changes, rather than focusing on short-term dieting behaviors that are often difficult to sustain

Dieting Behaviors

- Skipping meals
- energy intake is severely restricted
- food groups are lacking
- inadequate intakes of essential nutrients
- experience hunger or cravings for specific foods
- may place them at risk for binge-eating episodes
- dieting behaviors may be indicative of increased risk for the later development of eating disorders

Body Dissatisfaction

- body-image concerns should not be viewed as acceptable and normative components of adolescence

- Body dissatisfaction appears to increase dramatically following the body-weight increase that normally occurs in females around the time of menarche and remains a significant concern for females for the next 1–2 years

Body Dissatisfaction

- **Table 15.9** Tips for fostering a positive body image among children and adolescents

Table 15.9 Tips for fostering a positive body image among children and adolescents

Child or Adolescent	Parents	Health Professional
• Look in the mirror and focus on your positive features, not the negative ones. • Say something nice to your friends about how they look. • Think about your positive traits that are not related to appearance. • Read magazines with a critical eye, and find out what photographers and computer graphic designers do to make models look the way they do. • If you are overweight and want to lose weight, be realistic in your expectations and aim for gradual change. • Realize that everyone has a unique size and shape. • If you have questions about your size or weight, ask a health professional.	• Demonstrate healthy eating behaviors, and avoid extreme eating behaviors. • Focus on non-appearance-related traits when discussing yourself and others. • Praise your child or adolescent for academic and other successes. • Analyze media messages with your child or adolescent. • Demonstrate that you love your child or adolescent regardless of what he weighs. • If your child or adolescent is overweight, don't criticize her or his appearance—offer support instead. • Share with a health professional any concerns you have about your child's or adolescent's eating behaviors or body image.	• Discuss changes that occur during adolescence. • Assess weight concerns and body image. • If a child or adolescent has a distorted body image, explore causes and discuss potential consequences. • Discuss how the media negatively affects a child's or adolescent's body image. • Discuss the normal variation in body sizes and shapes among children and adolescents. • Educate parents, physical education instructors, and coaches about realistic and healthy body weight. • Emphasize the positive characteristics (appearance- and non-appearance related) of children and adolescents you see. • Take extra time with an overweight child or adolescent to discuss psychosocial concerns and weight-control options. • Refer children, adolescents, and parents with weight-control issues to a dietitian.

Anorexia Nervosa

- about 9 out of 10 individuals with anorexia nervosa are females

- Characteristics of anorexia nervosa include:
  - preoccupation with food
  - self-starvation
  - strong fears of being fat

Anorexia Nervosa

- Key features of anorexia nervosa are:
  - refusal to maintain body weight over a minimal normal weight for age and height
  - intense fear of gaining weight or becoming fat, even though underweight
  - distorted body image
  - amenorrhea (in females).

Anorexia Nervosa

- **Restricting Type**
  During the episode of anorexia nervosa, the person **has not** regularly engaged in binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).

- **Binge-Eating/Purging Type**
  During the episode of anorexia nervosa, the person has regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).

Anorexia Nervosa

- both subtypes present with a refusal to maintain a minimally normal body weight.

- **Which differentiates them** from other types of eating disorders.

Anorexia Nervosa

- An estimated 10–15% of patients with anorexia nervosa die from their disease!!!!
  - Weakened immune system due to undernutrition
  - gastric ruptures
  - cardiac arrhythmias
  - heart failure
  - suicide

Anorexia Nervosa

- Full recovery rates are estimated at <50% of individuals with anorexia nervosa
- 33% show improvements
- 20% are chronically affected by this mental illness.

Anorexia nervosa

Bulimia Nervosa

- characterized by the consumption of large amounts of food with subsequent purging by:
  - self-induced vomiting
  - laxative or diuretic abuse
  - Enemas
  - and/or obsessive exercising

Bulimia Nervosa

- Anorexia nervosa →severe weight loss

- Bulimia nervosa may show →
  - weight maintenance
  - or extreme weight fluctuations

due to alternating binges and fasts

Bulimia Nervosa

- Key features of bulimia nervosa include:
  - recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time)
  - feeling of lack of control over eating during the binge
  - Some form of purging food and calories from the body
  - persistent over concern with body shape and weight

Bulimia Nervosa

- There are two categories of bulimia nervosa:
  - **Purging**
    - regularly engage in self-induced vomiting and/or the use of laxatives, diuretics, or enemas to purge calories from the body
  - **non-purging**
    - may fast in between binge episodes and utilize compensatory exercise as a means of compensating for caloric intake

Bulimia Nervosa

- People with bulimia nervosa can be overweight, underweight, or of average weight for their height and body frame

- Recovery rates for bulimia nervosa are estimated at 48% for full recovery, 26% for improvement, and 26% for chronicity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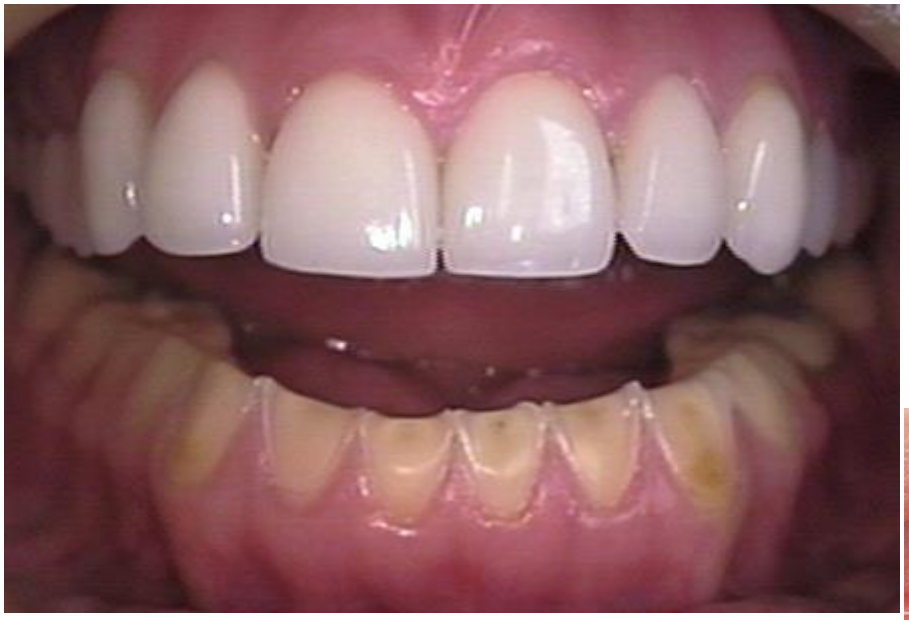
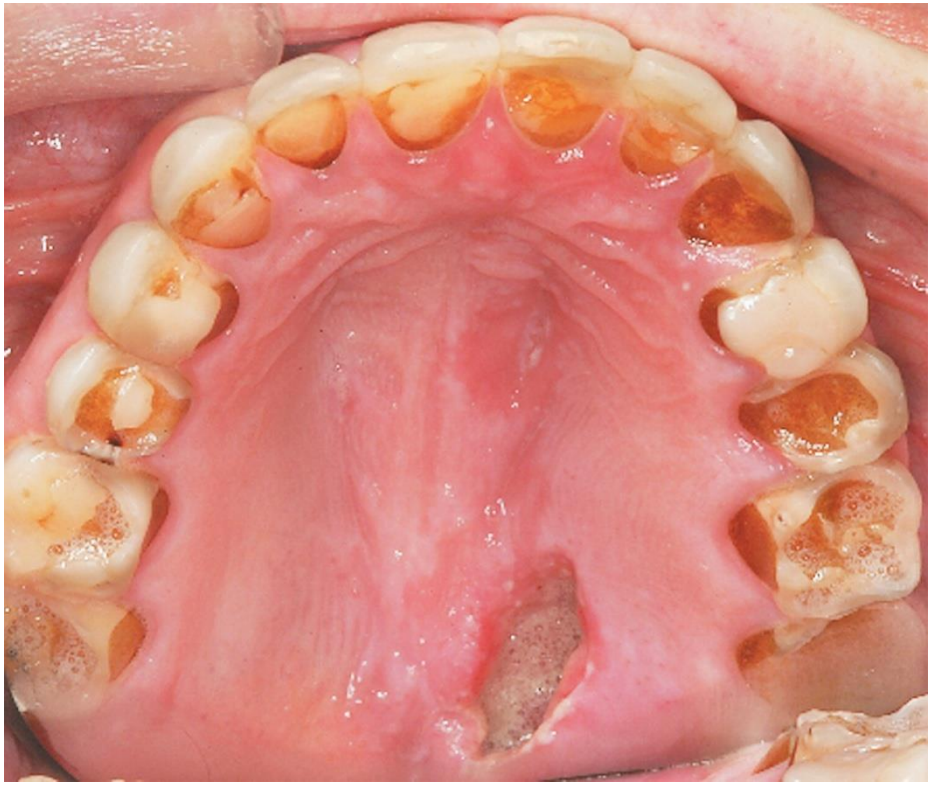
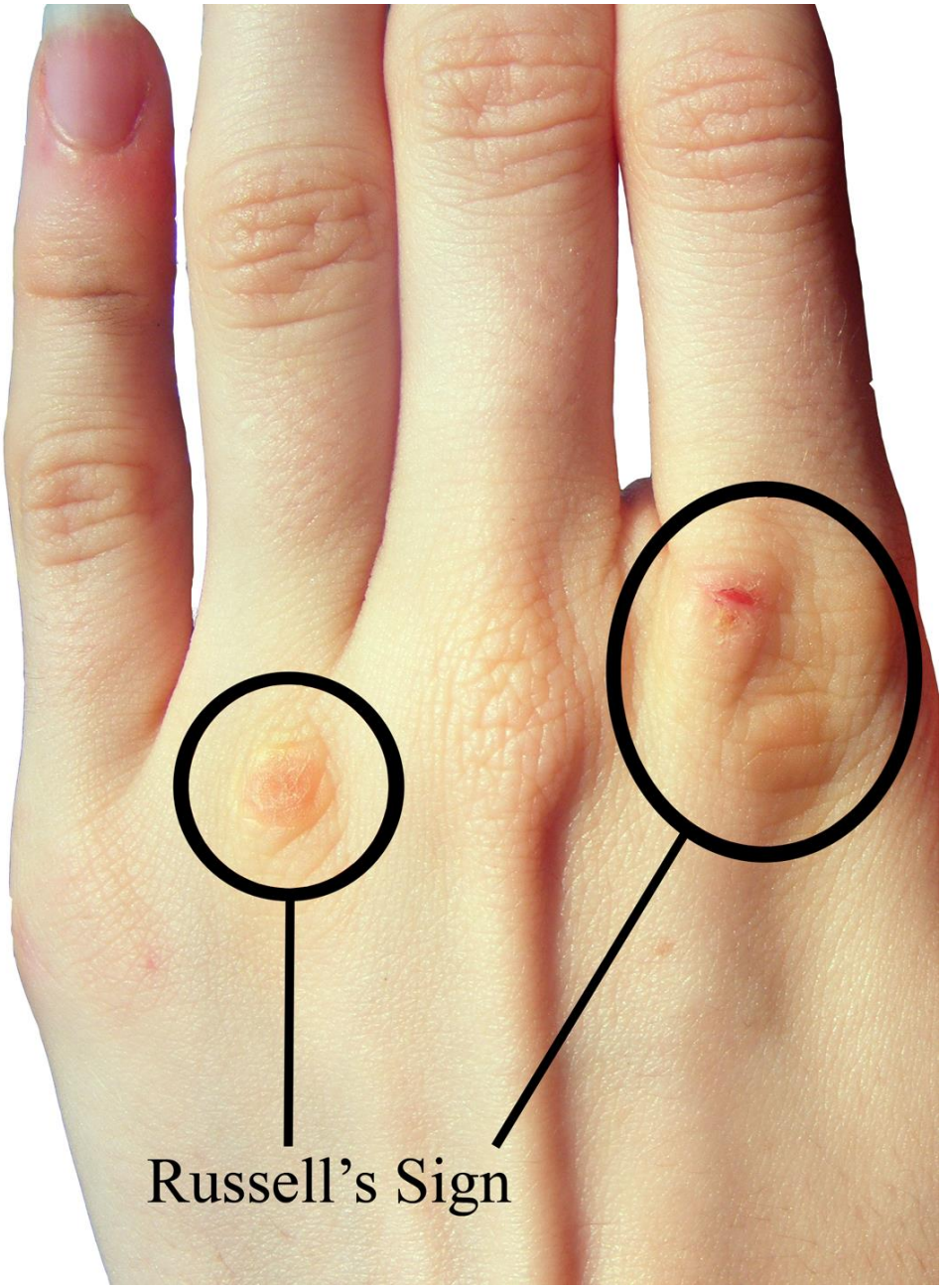




- due to repeated self-induced vomiting over long periods of time



Binge-Eating Disorder

- is a condition in which an individual engages in eating large amounts of food and feels that these eating episodes are not within one's control

- BED is defined by recurrent episodes of binge eating at least 2 days a week for at least 6 months

- Either before dieting or dieting as a risk factor

Binge-Eating Disorder

- The person feels a subjective sense of a loss of control over binge eating, which is indicated by the presence of three of the following five criteria:
  - eating rapidly,
  - eating when not physically hungry,
  - Eating when alone,
  - eating until uncomfortably full,
  - Feeling self-disgust about bingeing.

- BED differs from bulimia nervosa in that binge eating is not followed by compensatory behaviors

Etiology of Eating Disorders

- Multifactorial

- Potential contributory factors for eating disorders can be categorized into:
  - Environmental (social norms emphasizes thinness)
  - Familial
  - Interpersonal
  - Personal
    - Different conditions tend to be influenced by different factors
  - Read page 396 (screening elements: table 15.15 – PAGE 396)

Treating Eating Disorders

- The health care team caring for an adolescent with an eating disorder will often include a :
  - Physician
  - Dietician
  - Nurse
  - Psychologist (counselor)
  - Psychiatrist (medical doctor)

Table 15.15 Suggested criteria for inpatient treatment of eating disorders

Medical Criteria	Psychosocial Criteria
Failure to thrive (BMI <3rd percentile)	Social isolation
Rapid and dramatic weight loss	Depression
Very low caloric intake	Obsessive-compulsive disorder
Refusal to eat or drink	Suicidal thoughts or tendencies
Hypokalemia	Lack of parental support
Alkalosis	Poor family communication and dynamics
Bradycardia	Poor response to outpatient or day treatment
Pancreatic dysfunction	
Liver dysfunction	

Eating disorder treatment plan

- Treatment of medical comorbidities
- Restoration of body weight to a normal level
- Nutrition education and counseling to normalize food-related thoughts and beliefs
- Individualized psychotherapy to improve social well-being and emotional health
- Family therapy to improve communication and family function
- Group therapy