



# Obesity

Grand Rounds for Texas Community and State  
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## Disclosure

**I have no actual or potential conflict of interest in relation to any product or service mentioned in this program or presentation.**



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## Agenda

1. Learning objectives
2. Definition
  - Childhood
  - Adult
3. Epidemiology
4. Etiology
5. Evaluation
6. Management



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## Learning Objectives

- Be able to define obesity
- Be able to identify the tools used to identify obesity
- Be able to discuss how commonly obesity exists
- Be able to discuss the causes of obesity
- Be able to discuss how members with obesity can be evaluated
- Be able to discuss the management of members with obesity
- What is our role as case managers for members with obesity



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## Reasons for treating Obesity

- Increased morbidity
  - Diabetes mellitus
  - Hypertension
  - Dyslipidemia
  - Heart disease
  - Stroke/CVA
  - Sleep Apnea
  - Cancer
- Increased Mortality



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## Obesity- Tools

- Overweight refers to a weight above normal
- Obesity in children
  - BMI ( Body Mass Index) used in children age 2 and older
- Obesity in Adults
  - BMI
  - Secondary measure waist circumference
- BMI is defined as weight divided by the height squared (height X height)
  - There are formulas for both metric ( kilogram and meters) and English systems ( pounds and inches)



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## Categories of BMI for children 2-20 years of age

- Underweight- BMI < 5<sup>th</sup> percentile for age and gender
- Normal weight- BMI between the 5<sup>th</sup> and 85<sup>th</sup> percentile for age and gender
- Overweight- BMI between >85<sup>th</sup> and 95<sup>th</sup> percentiles for age and gender
- Obese- BMI  $\geq$  95<sup>th</sup> percentile for age and gender
- Severely obese-  $\geq$  of the 95<sup>th</sup> percentile or a BMI  $\geq$  35kg/meters<sup>2</sup>



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## Categories of BMI in Adults

- Underweight- BMI < 18.5 kg/m<sup>2</sup>
- Normal weight- BMI  $\geq$  18.5 to 24.9 kg/m<sup>2</sup>
- Overweight- BMI  $\geq$  25 to 29.9 kg/m<sup>2</sup>
- Obesity- BMI  $\geq$  30 kg/m<sup>2</sup>
  - Class 1- BMI 30 to 34.9 kg/m<sup>2</sup>
  - Class 2- BMI 35 to 39.9 kg/m<sup>2</sup>
  - Class 3- BMI  $\geq$  40kg/m<sup>2</sup> ( also referred to severe, extreme or massive obesity)
  - Obesity markers for South Asians are lower
    - 21kg/m<sup>2</sup>



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## Waist Circumference in Adults

- Waist circumference can be an indicator of increased cardiometabolic risk
  - $\geq 40$  inches for men
  - $35 \geq$  inches for women
- Useful with BMI's 25 to 35 kg/m<sup>2</sup>
- Japanese and South Asians- lower thresholds
  - $31 \geq$  for women
  - $35 \geq$  for men



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## Prevalence of obesity

- The percentage of both children and adults with obesity is increasing in both children and adults in the US as in other resource rich countries.
- Rise in obesity in children in last decades
- Typically childhood obesity persists as an adult
- Most severely obese adolescents are severely obese as adults



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## Prevalence of overweight children

- Preschool (2 to 5 years )            26%
- School aged (6 to 11 years)        34.1%
- Adolescents (12 to 19 Years)    40%
  
- Childhood obesity is more common in Native Americans, American Blacks and Mexican Americans than non-Hispanic whites
- Also more common in low-income, less educated and rural populations.



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## Prevalence of obese children

- Preschool                                13.7%
- School aged                            18.7%
- Adolescents                            20.6%



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## Prevalence of severely obese children

- Preschool 1.8%
- School aged 5.2%
- Adolescent 7% of girls  
9.7 boys



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## Prevalence of Obesity in Adults

- Two different reports used
  - Self reported (BRFSS)
  - Field Surveys ( NHANES)
- The self reports show a lower rate-self bias
- NHANES progressive increase from 1988 to 2015
- Obesity 41.1% Prevalence in 2014-2015
  - Men 37.9%
  - Women 41.1%



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## Prevalence in Adults

- Severe obesity has risen from 5.7 to 7.7% between 2007 and 2016
- Projections for 2030 for US adults
  - Obesity 50%
  - Severe Obesity Almost 25% of obese



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## Etiology

- Predominately related to life style
- Excess calories for exercise
  - Excess calories in diet
    - Source of calories
  - Sedentary life style
  - Lack of sleep



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## Evaluation in Adults

- History and Physical
- Fasting glucose/A1C
- TSH
- Liver enzymes
- Fasting lipids



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## Evaluation of Overweight Patients

- Height
- Weight
- BMI
- Waist Circumference
- Blood Pressure
- Lipid panel
- Fasting glucose/A1C
- Sleep Apnea
- Medications
- Sleep Apnea
- Physical activity
  - Type
  - Duration
  - Frequency
- Any related conditions that might cause
  - Endocrine
  - Genetic



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## Management of Adult Obesity

- For diabetes mellitus intensive life style modification reduced the progression from glucose intolerance to diabetes over 3 years.
- Require less CVD risk-lowering drugs
- Goal is to prevent, treat or reverse the complications of as little 5% of body weight
- Typically a weight loss of 5 to 7 percent is achievable
- A weight loss of 5 to 10% is considered when using both drug and behavioral interventions



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## Identify candidates

- Little or no risk            BMI 20 to 25 kg/m<sup>2</sup>
- Low risk                    BMI 25-29.9 kg/m<sup>2</sup>
  - Interventions-
  - Life style
    - Weight gain prevention
    - Dietary habits exercise



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## Identify candidates

- Moderate risk BMI 25 to 29.9kg/m<sup>2</sup>
  - With one or more CVD risk factor
    - Diabetes
    - hypertension
    - Dyslipidemias
  - intervention
    - Behavioral
    - Physical activity//exercise
    - Support
    - Maintain weight loss
    - Medications



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## Identify candidates

- High risk- BMI 35 to 40kg/m<sup>2</sup>-especially ages 20 to 39 and BMI > 40kg/m<sup>2</sup>
  - Most aggressive interventions
    - Behavioral, medications, bariatric surgery



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## Comprehensive lifestyle change

- Example Diabetes prevention Program (DPP)
  - 2 goals
    - Minimum 7 % weight loss using low-fat, low-calorie diet
    - Minimum of 150 minutes of exercise per week such as brisk walking
    - Behavioral
    - More effective than medication- 54 vs 31 % risk reduction



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## Dietary

- Dietary adherence is key
- Most adults will lose weight on < 1000 kcal/day
  - 800-1200kcal/day
  - More severe caloric restriction do not show better results
- If weight loss is less than 5% in the first 6 months reconsider strategy
- 



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## Dietary

- Men lose more weight than women for a given weight and height with similar diets
- Older members lose weight at a slower pace- metabolic rate decreases by 2 % per decade
- Initial rate of loss may be a marker for long-term success
- 2200 kcal/day for 100 kg woman  $\pm$  20% ( 1860-2620)
- 500 kcal/day should result in .05 kg/week (1 lb. /week) weight loss)
- May need to increase caloric restriction after 3 to 6 months



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## Types of Diets

- Balanced low-calorie and low-calorie versions of healthy diets ( e.g., Mediterranean and DASH diets)
- Low-fat
- Low carbohydrate and low glycemic index
- High-protein
- Ver low calorie
- Fad diets



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## Basic approach

- Dietary log/4 hour recall
- Stop all caloric beverages and processed foods
- Portion control
- Self-monitoring
- Adapt a health long-term approach



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## Exercise

- 30 minutes or more at least 5 days a week
- Both aerobic and resistance training
- Doctor clearance
- Should be combined with weight loss



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## Behavioral

- Goal is to make long term changes in eating behavior
  - Food intake
    - Modification
    - Monitoring



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## Medications

- Can be considered with a BMI  $\geq 30$  kg/m<sup>2</sup>
- Medications include
  - Liraglutide
  - Orlistat
  - Pheneteramine



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## Procedures

- Failed supervised weight loss
  - Life style changes
- BMI.40kg/m<sup>2</sup>
- BMI >35 mg/m<sup>2</sup> with one or more complications



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## Procedures

- Laparoscopic adjustable gastric banding
- Electrical Stimulators
- Intra-gastric balloons
- Gastric emptying systems
- Hydrogels
- Bariatric surgery



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## Case Management

- Correct term is severe obesity not morbid obesity
- The term obesity may be associated with stigmas
  - Try unhealthy or excess weight
  - A person with obesity rather than an obese person
  - Education on treatment options



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## Case Management

- Support
  - In person support groups
    - Obesity Action Coalition (OAC)
    - Overeaters Anonymous
  - Local exercise groups
    - Group diet and exercise programs are more effective
      - Meetup.com
  - Clinic-based groups
- Online forums, include. They may offer inaccurate advise
  - Bariatric Pat
  - Obesity Help
  - MyFitnessPal
  - 3 Fat Chicks



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## Case Management

- Social Media and apps
  - MyFitnessPal
  - Create your own group
  - Fitbit
- Commercial programs
  - Weight Watchers
  - Jenny Craig
- Bariatric surgery support
  - Suggestions from bariatric center
  - Meetup.com



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## Questions

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## Post Test

- What tools are used to measure and define obesity in children and adults?
- What are the various categories using the weight and height tool?
- Is obesity increasing in children and adults?
- What are the major factors that contribute to obesity?
- How should obese members be managed by their treatment team?
- Be able discuss how to provide case management for obese members?
  - Are there tools that can be used?
  - What are some support groups?

