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Obesity in Children





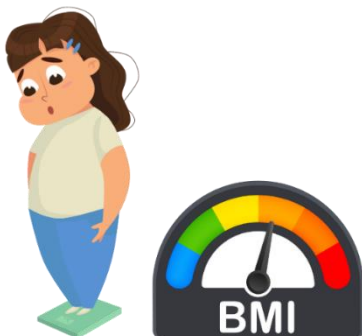
What is obesity?

Childhood obesity is a major problem because it causes serious harm and leads to health problems that negatively impact children's health.

For those over two years of age: when the body mass index is more than 95% on the growth chart.

For those under two years: when the weight to height ratio more than 97% according to the growth chart.

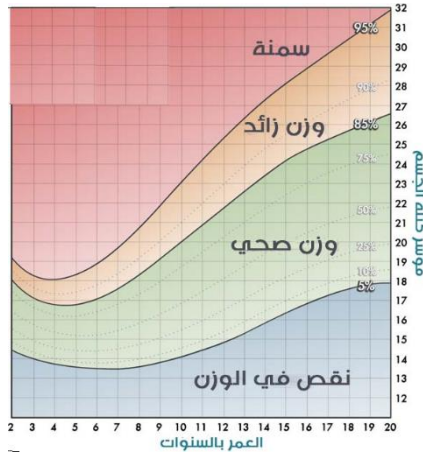
Children who are overweight and at risk of obesity if their body mass index is between 85 and 95 percent.



When should a child be examined?

All children in schools or health centers must be examined annually to ensure that they are not obese.

During the Corona period, the risk of infection and the severity of symptoms increased, and the Ministry of Health published warnings and reminders of the risks.



What are the causes of obesity?



When energy consumption is less than its production, fat accumulates due to lack of movement and a sedentary lifestyle.

Several factors increase the rate of obesity, including:

1. **Genetic**
2. **Environmental**: due to stress & cortisol, sleep deprivation, (screen time) TV “Media Time”, mobile
3. **Diet**: excessive consumption of fat, carbohydrate, trans unsaturated fatty acids (Trans-Fats), fructose, and food that have low glycemic Index and fiber





What are the causes of obesity?

4. **Endocrine:** hypothyroidism, glucocorticoid excess, growth hormone deficiency, pseudo hypoparathyroidism Type 1a
5. **Medications:** anti-depressants, antipsychotics, steroids.
6. **Trauma to head, or surgery**





What are the comorbidities of obesity?

- Depression and poor self esteem
- High blood pressure
- Metabolic syndrome, resulting from high blood pressure and insulin resistance associated with obesity, and an imbalance in the level of body fat.
- Type 2 diabetes
- Sleep apnea
- Bone or joint problems, such as pain in the knee, thigh, or hip, or a slipped femoral head.





What are the comorbidities of obesity?

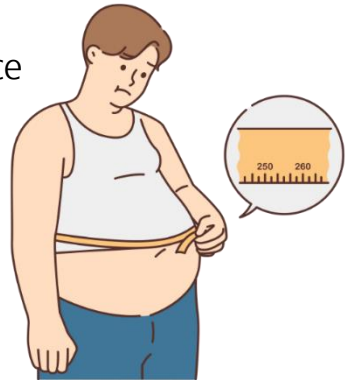
- Back pain
- Liver infections
- Pancreatitis
- Gallstones that cause abdominal pain
- Polycystic ovary syndrome, which causes disruption and irregularity in the menstrual cycle in girls.
- Pseudotumor cerebri which is a condition that causes severe headache, with visual disturbances.





What are the strategies for preventing childhood obesity?

1. Educate about healthy diet and activity
2. Healthy diet: decrease sweetened beverages, fast food, high fat, high sodium, and high sugar diet
3. Eat fruits instead of drinking it as juice
4. Exercise 20 -60 minutes
5. Good sleep pattern
6. Decrease screen time
7. Involve the whole family and educate them
8. School programs to prevent obesity
9. Breast feeding





What is the treatment for obesity?

- **Begin early** before the development of severe obesity.
- **Involve the entire family** and progress in a stepwise manner as habits are changed and skills are learned.
- **Increased consumption** of single portion packaging dietary, fiber, fruits, and vegetables.
- **Decreased consumption** of fast foods, added table sugar and elimination of sugar-sweetened beverages, high-fructose corn syrup and improved, high-fat, high-sodium, processed foods, saturated dietary fat intake.



What are the lifestyle modifications and interventions for obesity?

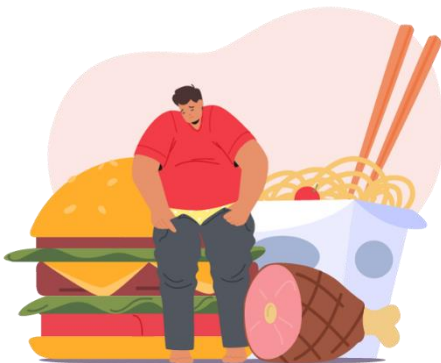
1. **Dietary intervention**, includes decrease caloric intake, reduce the insulin resistance, daily caloric intake will vary from patient to patient depending on age and degree of adiposity.
2. **Physical activity intervention**, the benefit of exercise include increases energy expenditure and increase muscle mass, this lead to
3. **Family intervention**





what are the behavioral modifications for obesity?

- ✓ Eat meals as family.
- ✓ Eat slowly, take at least 20 min for satiety cues to take effect.
- ✓ Increase consumption of water rather than soft drink
- ✓ Do not use food as a reward.
- ✓ Do not eat while watching TV.
- ✓ Walk 20-30 min per day.
- ✓ Take stairs instead of escalators or elevators.





What are the medications for obesity?

The FDA recently approved a number of weight-loss medications for pediatric (adolescence):

Appropriate for:

>12 years of age who have BMI > 30 kg/m²

or who have BMI > 27 kg/m² and at least 1 weight-related comorbid condition (e.g., hypertension or T2DM)





What are the medications for obesity?

- **Liraglutide (Saxenda):** For those over 12 years old and with a body mass index above 30.
- **Victoza:** for those who have type 2 diabetes.
- **Orlistat (Alli, Xenical):** Reduces fat absorption by 30%.
- **Pentermine-topiramate (Qsymia):** Weight loss medications may not be suitable for everyone, and their effects may decrease over time. Children may regain lost weight when stopped taking it.

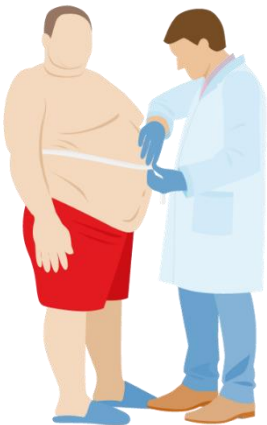




What is obesity surgery?

American Pediatric Surgical Association and the limited to those adolescents (near final adult HT and pubertal) with:

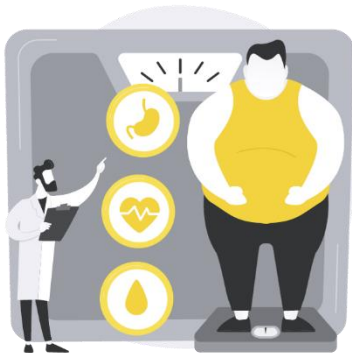
- BMI over 35 or 120% of the 95th percentile with presence of severe comorbidity (severe OSA, pseudotumor cerebri, type 2 diabetes or steatohepatitis)
- BMI over 40 or 140% of the 95th percentile with a less severe Comorbidity.





What are the complications of obesity surgery?

1. Hemorrhage
2. Infections
3. Anesthesia complications
4. Respiratory and breathing complications.
5. Intestinal perforation or intestinal obstruction
6. Malnutrition





What are the obesity surgery complications?

7. Gastric ulcer or gastric perforation
8. Hernia
9. Dumping syndrome (which presents with nausea vomiting diarrhea)
10. Cholelithiasis
11. Hypoglycemia
12. Death (a rare complication)



Sources and references:

<https://www.canva.com>

Review and audit:

The content of this booklet has been reviewed by
Endocrinology consultants at King Fahd University

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