

- Body Growth in Middle Childhood
  - Slow, regular pattern
  - Grow around 2-3 inches and gain about 5 pounds per year
  - Lower portion of body growing fastest
  - Bones lengthen
  - Muscles very flexible
    - Ligaments aren't attached to bones yet
  - All permanent teeth arrive
  - Torso becomes slimmer
  - Center of gravity shifts to pelvic area
- Sex differences
  - Girls shorter and lighter shorter and lighter until around age 9
  - Girls higher proportion of body fat
  - Boys more muscle
- Growth Worldwide
  - Racial differences in body structure; genetic and nutritional contribution as well
  - Shortest children:
    - South America, Asia, Pacific Islands, parts of Africa
  - Tallest children:
    - North & Central Europe, Australia, Canada, U.S.
  - Secular trend in industrialized countries toward larger and heavier children
    - Partially due to adequate nutrition
- Brain Development in Middle Childhood
  - Brain weight increases by 10%,
  - Increase in white matter in the frontal lobes of the cerebral cortex
    - Leads to more efficiency
  - Decrease in gray matter
    - Losing neurons; synaptic pruning
  - Synaptic connections and myelination occur at the same time as synaptic pruning
    - Leads to greater lateralization of the cerebral hemispheres, more differentiation in the sides of the brain
    - Corpus callosum is thickening
  - Neurotransmitters and hormones may affect cognition and behavior
  - Dramatic growth spurt of frontal cortex between 6 and 8 years old (when children begin school)
- Common Health Problems in Middle Childhood
  - Vision – Myopia (Nearsightedness)
    - Causes of Myopia
      - Genetics
        - Myopic parents
        - Asian heritage
      - Early biological trauma
        - Low birth weight

- Experience
      - Reading and close work
      - Computer use
    - About 1/5 of children ages 6 to 11 have Myopia
    - About ¾ by the end of the school years
  - Hearing - Otitis media (middle ear infection)
  - Malnutrition
    - Little focus on eating
    - Fewer meals with family
      - Meals at the family dinner table encourage better nutrition choices in children
      - More milk and vegetables consumed than when eating elsewhere
    - Too few fruits and vegetables
    - Too many friend foods and soft drinks
      - Possible Vitamin D deficiencies
        - Can be fixed by drinking milk, taking supplements, or spending more time in the sun (without sunscreen)
    - Poverty and lack of nutritional food
      - People in poverty know less about nutrition and are more likely to buy low-cost, high-fat foods
      - Higher stress levels also lead to poor nutrition choices
  - Obesity
    - Obesity Rates on the Rise
      - A dramatic rise in overweight and obese rates has occurred in many Western nations.
      - Today about 1/3 of North American children and adults are overweight.
      - 17% of U.S. children and 15% of Canadian children are obese
      - Obesity rates are also rapidly increasing in developing nations.
      - In China, for example—there has been a four fold increase over the last 50 years
        - Cultural beliefs may contribute to the problem - boys who are more overweight are valued more and overweight may be seen as a status symbol for prosperity
        - Increase in Obesity Among 7- to 18-Year Olds in China from 1985 to 2000
          - Boys more overweight than girls
    - The Seriousness of the Obesity Epidemic
      - Over 80% of children who are overweight or obese will become overweight adults, at risk for lifelong health problems.
      - Type II Diabetes is rising rapidly among overweight children, sometimes with severe, early complications.
    - Causes of Obesity in Middle Childhood
      - Overweight Parents
      - Early rapid growth
      - Malnutrition
        - Early malnutrition leads to slower metabolism, causing people to need less food

- Low SES
- Family eating habits
  - Ex- food as rewards, fast food
- Response to food cues
  - Greater responsiveness to external stimuli associated with food
  - Less responsiveness to internal hunger cues
  - USUALLY this is the opposite in children
- Low physical activity
  - Television/advertising - kids see 25,600 commercials/year. 22% are for breakfast, snacks, and fast food. 43% are for sedentary activities such as other shows, movies, or video games.
- School
  - Less money to put towards food
  - Fattening foods are cheaper
- Risks for Obese Children
  - More likely to be overweight adults
  - Health risks
    - High blood pressure
    - High cholesterol
    - Respiratory problems
    - Diabetes
    - Liver, gall bladder problems
    - Cancer
  - Psychological risks
    - Feeling unattractive
    - Stereotyping and teasing
    - Depression
    - Problem behaviors
    - Early puberty and sexual problems (adult-like body with a child-like brain)
- Bedwetting
  - Nocturnal Enuresis
  - 10% school-aged
  - Hereditary contributions
  - Causes:
    - Poor muscular responses
      - Failure of muscles to respond during sleep
    - Hormonal imbalance
      - Permits too much urine to accumulate during the night
    - Difficulty awakening
      - Trouble waking up to the sensation of a full bladder
  - Treatment:
    - Antidepressants for hormone imbalance
    - Urine alarms to wake the child at the first sign of dampness; most effective
- Illnesses
  - More acute (short-term) illnesses first two years of school