

Life-Span Development Thirteenth Edition

Chapter 9: Physical and Cognitive Development In Middle and Late Childhood

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Physical Changes and Health

- Body Growth and Change:
 - Growth averages 2–3 inches per year
 - Weight gain averages 5–7 lbs. each year
 - Muscle mass and strength gradually increase; baby fat decreases

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Physical Changes and Health

- The Brain:
 - Brain volume stabilizes
 - Significant changes in structures and regions occur, especially in the prefrontal cortex
 - Increases in cortical thickness
 - Activation of some brain areas increase while others decrease

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Physical Changes and Health

- Motor Development:
 - Motor skills become smoother and more coordinated
 - Improvement of fine motor skills during middle and late childhood due to increased myelination of the central nervous system
 - Boys outperform girls in large muscle activities and girls usually outperform boys on fine motor skills

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Physical Changes and Health

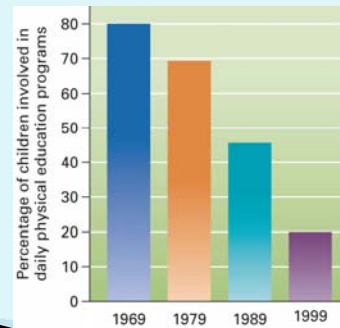
- Exercise
 - Elementary school children need to be active
 - Percentage of children involved in daily P.E. programs in schools decreased from 80% (1969) to 20% (1999)
 - Television watching is linked with low activity and obesity in children
 - Exercise linked to cognitive development

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Physical Changes and Health

Exercise



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Physical Changes and Health

- Health, Illness, and Disease
 - Middle and late childhood is usually a time of excellent health
 - Accidents and Injuries
 - Motor vehicle accidents are most common cause of severe injury
 - Overweight Children
 - 30% of U.S. children are at risk of being overweight
 - Cardiovascular Disease
 - Uncommon in children but risk factors are present

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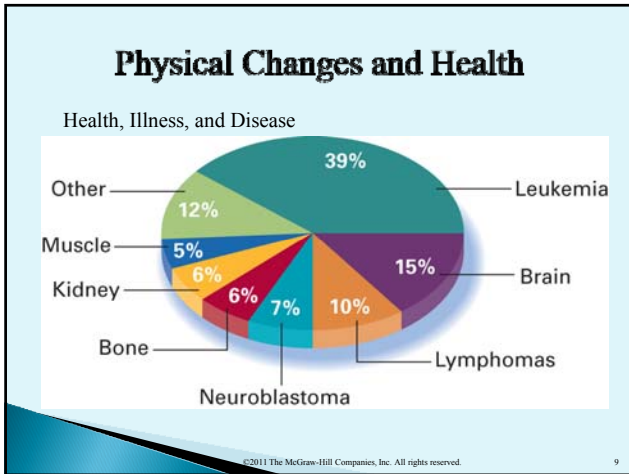
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Physical Changes and Health

- Health, Illness, and Disease
 - Cancer
 - Cancer is the 2nd leading cause of death in children 5–14 years old
 - Most common child cancer is leukemia
 - Children with cancer are surviving longer because of advancements in cancer treatment

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Children With Disabilities

Disability	Percentage Served
Specific learning disabilities	5.6
Speech or language impairments	3.0
Mental retardation	1.1
Emotional disturbance	1.0

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- ### Children With Disabilities
- The Scope of Disabilities
 - Learning Disabilities
 - Difficulty in learning that involves understanding or using spoken or written language, and the difficulty can appear in listening, thinking, reading, writing, and spelling
 - Boys are identified three times more frequently than girls
 - Dyslexia, dysgraphia, and dyscalculia are most common
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- ### Children With Disabilities
- The Scope of Disabilities
 - Attention deficit hyperactivity disorder (ADHD)
 - Characterized by inattention, hyperactivity, and impulsivity
 - Number of children diagnosed has increased substantially
 - Possible Causes
 - Genetics
 - Brain damage during prenatal or postnatal development
 - Cigarette and alcohol exposure during prenatal development
 - Low birth weight
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Children With Disabilities

- The Scope of Disabilities
 - Emotional and Behavioral Disorders
 - Serious, persistent problems that involve relationships, aggression, depression, and fears associated with personal or school matters, as well as other inappropriate socioemotional characteristics
 - Autism Spectrum Disorders (ASD)
 - Autistic disorder to Asperger syndrome
 - Appears to be a brain dysfunction

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Children With Disabilities

- Educational Issues:
 - 1975: all public schools required to serve disabled children
 - Law requires disability students to receive:
 - IEP (Individualized Education Plan): written statement that is specifically tailored for the disabled student
 - LRE (Least Restrictive Environment): a setting that is as similar as possible to that of non-disabled children
 - Inclusion: educating a child with special education needs in the regular classroom

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Cognitive Changes

- Piaget's Cognitive Developmental Theory
 - Concrete Operational Stage: Ages 7 to 11
 - Children can perform concrete operations and reason logically, and are able to classify things into different sets
 - Seriation: the ability to order stimuli along a quantitative dimension
 - Transitivity: the ability to logically combine relations to understand certain conclusions

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Cognitive Changes

- Information Processing
 - Memory: long-term memory increases with age during middle and late childhood
 - Knowledge and Expertise
 - *Experts* have acquired extensive knowledge about a particular content area
 - Strategies
 - Fuzzy Trace Theory

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Cognitive Changes

- Information Processing
 - Thinking
 - Critical Thinking: thinking reflectively and productively, and evaluating evidence
 - Mindfulness
 - Creative Thinking: the ability to think in novel and unusual ways, and to come up with unique solutions to problems
 - Convergent thinking vs. Divergent thinking

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Cognitive Changes

- Information Processing
 - Metacognition: cognition about cognition
 - Metamemory: knowledge about memory
 - Children have some knowledge of metamemory by 5–6 years of age
 - Scientific Thinking:
 - Asking fundamental and identifying causal relations questions about reality

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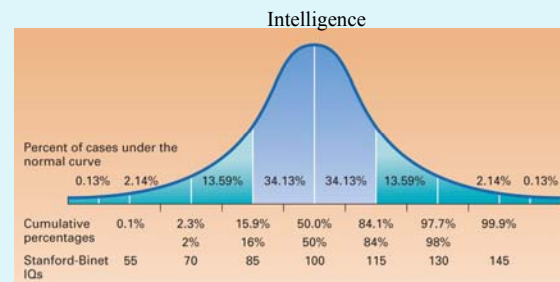
Cognitive Changes

- Intelligence
 - Ability to solve problems and to adapt and learn from experiences
 - Binet Tests: designed to identify children with difficulty learning in school
 - Mental age (MA): an individual's level of mental development relative to others
 - Intelligence quotient (IQ): a person's mental age divided by chronological age, multiplied by 100
 - Stanford-Binet Tests: revised version of the Binet test
 - Scores approximate a normal distribution—a bell-shaped curve
 - Wechsler Scales: give scores on several composite indices
 - Three versions for different age groups

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Cognitive Changes



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Intelligence

Wechsler Intelligence Scale for Children (WISC)


Verbal Subscales

Similarities
A child must think logically and abstractly to answer a number of questions about how things might be similar.
Example: "In what way are a lion and a tiger alike?"

Comprehension
This subscale is designed to measure an individual's judgment and common sense.
Example: "What is the advantage of keeping money in a bank?"

Nonverbal Subscales

Block Design
A child must assemble a set of multicolored blocks to match designs that the examiner shows. Visual motor coordination, perceptual organization, and the ability to visualize spatially are assessed.
Example: "Use the four blocks on the left to make the pattern on the right."



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Cognitive Changes

- Intelligence
 - Types of Intelligence:
 - Sternberg's Triarchic Theory of Intelligence
 - Analytical intelligence: ability to analyze, judge, evaluate, compare, and contrast
 - Creative intelligence: ability to create, design, invent, originate, and imagine
 - Practical intelligence: ability to use, apply, implement, and put ideas into practice

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Cognitive Changes

- Intelligence
 - Types of Intelligence (continued):
 - **Gardner's Eight Frames of Mind:**
 - *Verbal:* ability to think in words and use language to express meaning
 - *Mathematical:* ability to carry out mathematical operations
 - *Spatial:* ability to think three-dimensionally
 - *Bodily-Kinesthetic:* ability to manipulate objects and be physically adept
 - *Musical:* sensitivity to pitch, melody, rhythm, and tone
 - *Interpersonal:* ability to understand and interact effectively with others
 - *Intrapersonal:* ability to understand oneself
 - *Naturalist:* ability to observe patterns in nature and understand natural and human-made systems

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Cognitive Changes

- Intelligence
 - Evaluating Multiple-Intelligence Approaches:
 - Stimulated teachers to think more broadly about children's competencies
 - Contributed to interest in assessing intelligence and classroom learning
 - Research has not yet supported the different types

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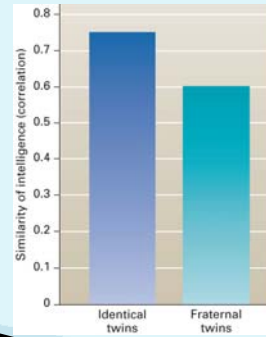
Cognitive Changes

- Interpreting Differences in IQ Scores
 - Influences of Genetics:
 - Environmental Influences
 - Group Differences
 - Creating Culture-Fair

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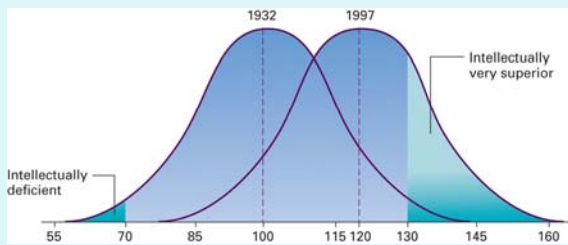
Differences in IQ Scores



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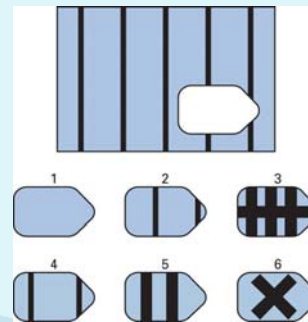
Differences in IQ Scores



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Differences in IQ Scores



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Cognitive Changes

- Intelligence
 - Using Intelligence Tests:
 - Avoid stereotyping and expectations
 - Know that IQ is not the sole indicator of competence
 - Use caution in interpreting an overall IQ score

Cognitive Changes

- Extremes of Intelligence:
 - Mental Retardation: a condition of limited mental ability in which an individual has a low IQ (typically below 70) and has difficulty adapting to everyday life
 - Can be mild, moderate, or severe
 - Organic retardation and Cultural-familial retardation

Cognitive Changes

- Extremes of Intelligence (continued):
 - Giftedness: people who have 130 IQ or higher and/or superior talent for something
 - Three criteria:
 - Precocity
 - Marching to their own drummer
 - A passion to master

Language Development

- Vocabulary, Grammar, and Metalinguistic Awareness
 - During middle and late childhood, changes occur in the way children's mental vocabulary is organized
 - Similar advances in grammar skills
 - Metalinguistic Awareness: knowledge about language
 - Improves significantly during elementary school years

Language Development

- Reading:
 - Two approaches to teaching reading:
 - *Whole-language approach vs. Phonics approach*
- Writing
 - Parents and teachers should encourage children's early writing but not be concerned with the formation of letters or spelling

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Language Development

- Bilingualism and Second-Language Learning
 - Proficiency in learning a second language is a complex topic
 - U.S. students behind other countries
 - Bilingualism has a positive effect on children's cognitive development
- Bilingual Education
 - Pros and cons – however, research supports bilingual education

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