Prenatal Development and the Newborn

- Developmental Psychology
  - a branch of psychology that studies physical, cognitive, and social change throughout the life span
Prenatal Development and the Newborn

Life is sexually transmitted
Prenatal Development and the Newborn

- **Zygote**
  - the fertilized egg
  - enters a 2 week period of rapid cell division
  - develops into an embryo

- **Embryo**
  - the developing human organism from 2 weeks through 2nd month

- **Fetus**
  - the developing human organism from 9 weeks after conception to birth
Prenatal Development and the Newborn

40 days  45 days  2 months  4 months
Prenatal Development and the Newborn

- Teratogens
  - agents, such as chemicals and viruses, that can reach the embryo or fetus during prenatal development and cause harm
- Fetal Alcohol Syndrome (FAS)
  - physical and cognitive abnormalities in children caused by a pregnant woman’s heavy drinking
  - symptoms include facial misproportions
Prenatal Development and the Newborn

- **Rooting Reflex**
  - tendency to open mouth, and search for nipple when touched on the cheek

- **Preferences**
  - human voices and faces
    - face like images
  - smell and sound of mother
Infancy and Childhood: Physical Development

- Maturation
  - biological growth processes that enable orderly changes in behavior
  - relatively uninfluenced by experience

Cortical Neurons

At birth 3 months 15 months
Infancy and Childhood: Physical Development

- Babies only 3 months old can learn that kicking moves a mobile- and can retain that learning for a month (Rovee-Collier, 1989, 1997).
Infancy and Childhood: Cognitive Development

- **Schema**
  - a concept or framework that organizes and interprets information

- **Assimilation**
  - interpreting one’s new experience in terms of one’s existing schemas
Infancy and Childhood: Cognitive Development

- Accommodation
  - adapting one’s current understandings (schemas) to incorporate new information

- Cognition
  - All the mental activities associated with thinking, knowing, remembering, and communicating
# Piaget’s Stages of Cognitive Development

<table>
<thead>
<tr>
<th>Typical Age Range</th>
<th>Description of Stage</th>
<th>Developmental Phenomena</th>
</tr>
</thead>
</table>
| Birth to nearly 2 years | **Sensorimotor**                      | • Object permanence  
                          | Experiencing the world through senses and actions (looking, touching, mouthing) | • Stranger anxiety |
| About 2 to 6 years      | **Preoperational**                    | • Pretend play  
                          | Representing things with words and images but lacking logical reasoning | • Egocentrism  
                          |                                                               | • Language development |
| About 7 to 11 years     | **Concrete operational**              | • Conservation  
                          | Thinking logically about concrete events; grasping concrete analogies and performing arithmetical operations | • Mathematical transformations |
| About 12 through adulthood | **Formal operational**               | • Abstract logic  
                          | Abstract reasoning | • Potential for moral reasoning |
Infancy and Childhood: Cognitive Development

- **Object Permanence**
  - the awareness that things continue to exist even when not perceived
Infancy and Childhood: Cognitive Development

- Conservation
  - the principle that properties such as mass, volume, and number remain the same despite changes in the forms of objects
Infancy and Childhood: Cognitive Development

- **Egocentrism**
  - the inability of the preoperational child to take another’s point of view

- **Theory of Mind**
  - people’s ideas about their own and others’ mental states - about their feelings, perceptions, and thoughts and the behavior these might predict

- **Autism**
  - a disorder that appears in childhood
  - Marked by deficient communication, social interaction and understanding of others’ states of mind
Social Development

- **Stranger Anxiety**
  - fear of strangers that infants commonly display
  - beginning by about 8 months of age

- **Attachment**
  - an emotional tie with another person
  - shown in young children by their seeking closeness to the caregiver and showing distress on separation
Social Development

- Harlow’s Surrogate Mother Experiments
  - Monkeys preferred contact with the comfortable cloth mother, even while feeding from the nourishing wire mother
Social Development

- Critical Period
  - an optimal period shortly after birth when an organism’s exposure to certain stimuli or experiences produces proper development

- Imprinting
  - the process by which certain animals form attachments during a critical period very early in life
Social Development

- Monkeys raised by artificial mothers were terror-stricken when placed in strange situations without their surrogate mothers.
Groups of infants left by their mothers in a unfamiliar room (from Kagan, 1976)

- Percentage of infants who cried when their mothers left

![Graph showing the percentage of infants who cried when their mothers left in different environments.](image)

- Day care
- Home
Social Development

- **Basic Trust** (Erik Erikson)
  - a sense that the world is predictable and trustworthy
  - said to be formed during infancy by appropriate experiences with responsive caregivers
Social Development - Child-Rearing Practices

Parenting style (e.g., authoritative)

Child's traits (e.g., self-reliant, socially competent)

Harmonious marriage, common genes, or other third factor
Adolescence

- Adolescence
  - the transition period from childhood to adulthood
  - extending from puberty to independence

- Puberty
  - the period of sexual maturation
  - when a person becomes capable of reproduction
Adolescence

- **Primary Sex Characteristics**
  - body structures that make sexual reproduction possible
    - ovaries - female
    - testes - male
    - external genitalia

- **Secondary Sex Characteristics**
  - nonreproductive sexual characteristics
    - female - breast and hips
    - male - voice quality and body hair

- **Menarche (meh-NAR-key)**
  - first menstrual period
Throughout childhood, boys and girls are similar in height. At puberty, girls surge ahead briefly, but then boys overtake them at about age 14.
Body Changes at Puberty

- Underarm hair growth
- Breast development
- Enlargement of uterus
- Beginning of menstruation
- Pubic hair growth

Pituitary gland releases hormones that stimulate:
- Adrenal glands
- Ovaries
- Testes

To release hormones that stimulate:
- Adrenal glands

Facial and underarm hair growth
Larynx enlargement
Pubic hair growth
Growth of penis and testes
Beginning of ejaculation
# Erikson’s Stages of Psychosocial Development

<table>
<thead>
<tr>
<th>Approximate age</th>
<th>Stage</th>
<th>Description of Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infancy (1st year)</td>
<td>Trust vs. mistrust</td>
<td>If needs are dependably met, infants develop a sense of basic trust.</td>
</tr>
<tr>
<td>Toddler (2nd year)</td>
<td>Autonomy vs. shame and doubt</td>
<td>Toddlers learn to exercise will and do things for themselves, or they doubt their abilities.</td>
</tr>
<tr>
<td>Preschooler (3-5 years)</td>
<td>Initiative vs. guilt</td>
<td>Preschoolers learn to initiate tasks and carry out plans, or they feel guilty about efforts to be independent.</td>
</tr>
<tr>
<td>Elementary (6 years-puberty)</td>
<td>Competence vs. inferiority</td>
<td>Children learn the pleasure of applying themselves to tasks, or they feel inferior.</td>
</tr>
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</table>
# Erikson’s Stages of Psychosocial Development

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<tr>
<td>Adolescence</td>
<td>Identity vs. role</td>
<td>Teenagers work at refining a sense of self by testing roles and then integrating them to form a single identity, or they become confused about who they are.</td>
</tr>
<tr>
<td>(teens into 20’s)</td>
<td>confusion</td>
<td></td>
</tr>
<tr>
<td>Young Adult</td>
<td>Intimacy vs. isolation</td>
<td>Young adults struggle to form close relationships and to gain the capacity for intimate love, or they feel socially isolated.</td>
</tr>
<tr>
<td>(20’s to early 40’s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Adult</td>
<td>Generativity vs.</td>
<td>The middle-aged discover a sense of contributing to the world, usually through family and work, or they may feel a lack of purpose.</td>
</tr>
<tr>
<td>(40’s to 60’s)</td>
<td>stagnation</td>
<td></td>
</tr>
<tr>
<td>Late Adult</td>
<td>Integrity vs.</td>
<td>When reflecting on his or her life, the older adult may feel a sense of satisfaction or failure.</td>
</tr>
<tr>
<td>(late 60’s and up)</td>
<td>despair</td>
<td></td>
</tr>
</tbody>
</table>
Adolescence - Social Development

- **Identity**
  - one’s sense of self
  - the adolescent’s task is to solidify a sense of self by testing and integrating various roles

- **Intimacy**
  - the ability to form close, loving relationships
  - a primary developmental task in late adolescence and early adulthood
Adolescence- Social Development

- The changing parent-child relationship

Percent with positive, warm interaction with parents

<table>
<thead>
<tr>
<th>Ages of child in years</th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>60</th>
<th>80</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 to 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>5 to 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>9 to 11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20%</td>
<td></td>
</tr>
</tbody>
</table>
In the 1890’s, the average interval between a woman’s menarche and marriage was about 7 years; now it is over 12 years.
Adulthood- Physical Development

- Menopause
  - the time of natural cessation of menstruation
  - also refers to the biological changes a woman experiences as her ability to reproduce declines

- Alzheimer’s Disease
  - a progressive and irreversible brain disorder
  - characterized by a gradual deterioration of memory, reasoning, language, and finally, physical functioning
Adulthood - Physical Development

The Aging Senses

Proportion of normal (20/20) vision when identifying letters on an eye chart

Age in years
Adulthood - Physical Development

- The Aging Senses

Percent correct when identifying smells

Age in years

<table>
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<th>Percent correct when identifying smells</th>
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<tbody>
<tr>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>30</td>
<td>70</td>
</tr>
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<td>50</td>
<td>50</td>
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<tr>
<td>70</td>
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</tr>
<tr>
<td>90</td>
<td>10</td>
</tr>
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Adulthood - Physical Development

- The Aging Senses

Percent correct when identifying spoken words

Age in years
Adulthood- Physical Development

Slowing reactions contribute to increased accident risks among those 75 and older.
Recalling new names introduced once, twice or three times is easier for younger adults than for older ones (Crook & West, 1990)
In a study by Schonfield & Robertson (1966), the ability to recall new information declined during early and middle adulthood, but the ability to recognize new information did not.
Adulthood - Cognitive Development

- Cross-Sectional Study
  - a study in which people of different ages are compared with one another

- Longitudinal Study
  - a study in which the same people are restudied and retested over a long period of time
Adulthood- Cognitive Development

- **Crystallized Intelligence**
  - one’s accumulated knowledge and verbal skills
  - tends to increase with age

- **Fluid Intelligence**
  - one’s ability to reason speedily and abstractly
  - tends to decrease during late adulthood
Adulthood- Cognitive Development

- Verbal intelligence scores hold steady with age, while nonverbal intelligence scores decline (adapted from Kaufman & others, 1989)
Adulthood- Social Development

- Early-forties midlife crisis?

![Graph showing emotional instability over age]

- No early 40s emotional crisis
Adulthood- Social Changes

- Social Clock
  - the culturally preferred timing of social events
    - marriage
    - parenthood
    - retirement
Adulthood- Social Changes

Multinational surveys show that age differences in life satisfaction are trivial (Inglehart, 1990)