

Lecture Title: Child Development I & II

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OBJECTIVES: After studying this lecture you should be able to:

1. Understand the primary domains of pediatric development
2. Review normal pediatric milestones by age
3. Practice recognizing milestones by age
4. Understand Stage Theories of Development
5. Review Piaget's Theory of Cognitive Development
6. Review Erikson's Stages of Psychosocial Development
7. Review Freud's Development Theory

REFERENCES:

1. CDC's Developmental Milestones webpage
2. Crotty, J MD, Martin-Herz, S MD PhD, Scharf, R MD, PhD. Cognitive Development. *Pediatrics in Review* 44 (2): 58-67. February 01, 2023.
<https://doi.org/10.1542/pir.2021-005069>
3. Lantz SE, Ray S. Freud Developmental Theory. [Updated 2022 Dec 5]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK557526/>

Objectives

1. Understand the primary domains of pediatric development
2. Review normal pediatric milestones by age
3. Practice recognizing milestones by age





YOU DIDN'T DISAPPEAR

**YOU JUST COVERED YOUR
EYES**

Disclosures

None

Warning – cutest photos and videos you've ever seen....

Developmental Milestones

- Skills expected to develop as a child gets older.
 - Movement/Physical Development
 - Gross motor
 - Fine motor
 - Language/Communication
 - Social/Emotional
 - Cognitive: learning, thinking, problem-solving
- Guidelines expect ~75% or more of children would be expected to exhibit listed milestones
- Identification of missing milestones promotes early identification and action on developmental concerns so children and families can get the early services and support they may need

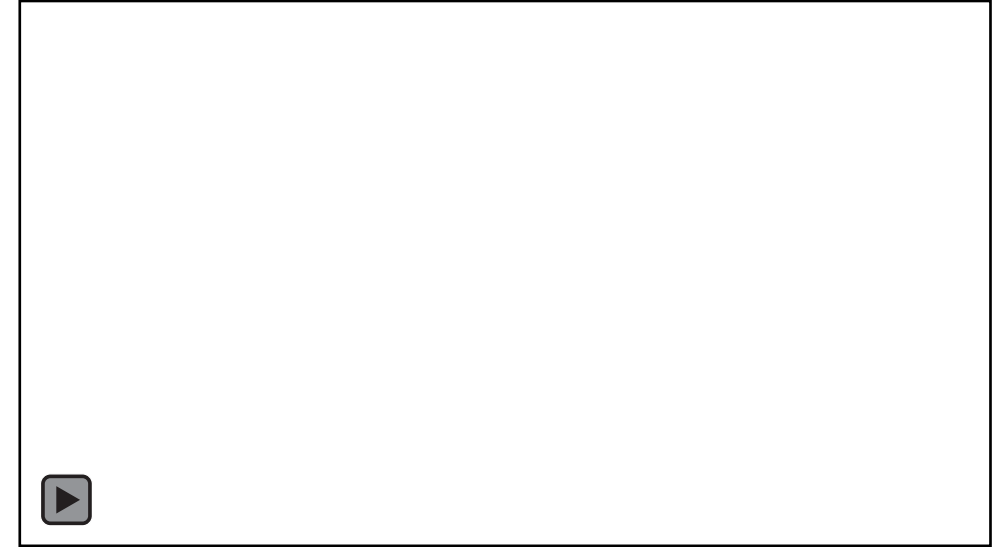
How do we monitor milestones?

- Developmental *surveillance*:
 - Continuous process recommended at every well check
 - Caregivers observe child's changes over time
- Developmental *screening*:
 - Formal screening at 9 months, 18 months, 24 months, and 30 months with validated tools
 - Autism specific screening at 18 and 24 months with validated tool
- Developmental *evaluation*:
 - Trained specialist takes an in-depth look at a child's development
 - Additional validated tools used

2 months



- Physical Development
 - Lifts head when prone
 - Moves extremities symmetrically
 - Bears weight on legs
 - Opens hands briefly
- Language/Communication
 - Reacts to loud sounds
 - Makes sounds other than crying (vowel sounds = cooing)



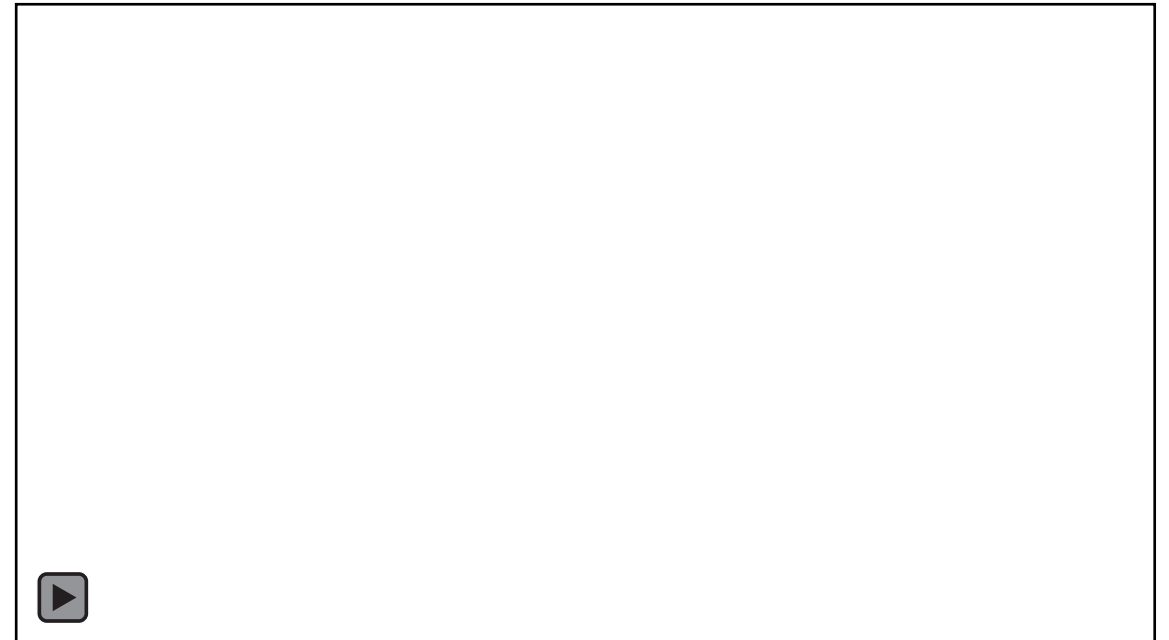
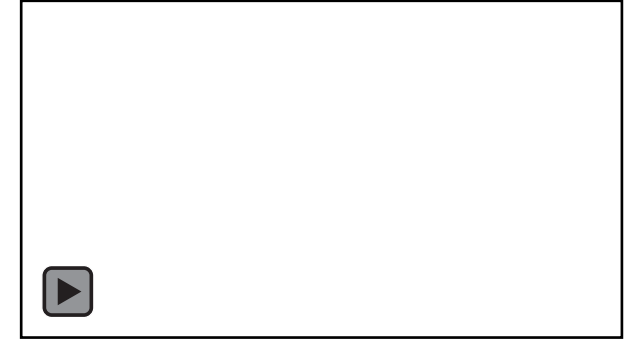
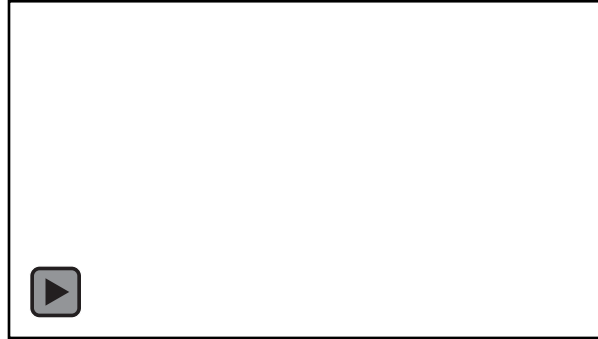
2 months

- Social/Emotional
 - Calms when spoken to or picked up
 - Looks at your face
 - Reactive smile
- Cognitive
 - Looks at a toy for several seconds
 - Watches you as you move
 - Follows past midline



4 months

- Physical Development
 - Gross motor
 - Holds head steady without support
 - Lifts head when prone (45°)
 - Fine motor
 - Holds a toy put in hand
 - Bats at toys
- Language/Communication
 - Increased cooing
 - Turns head toward sound of your voice



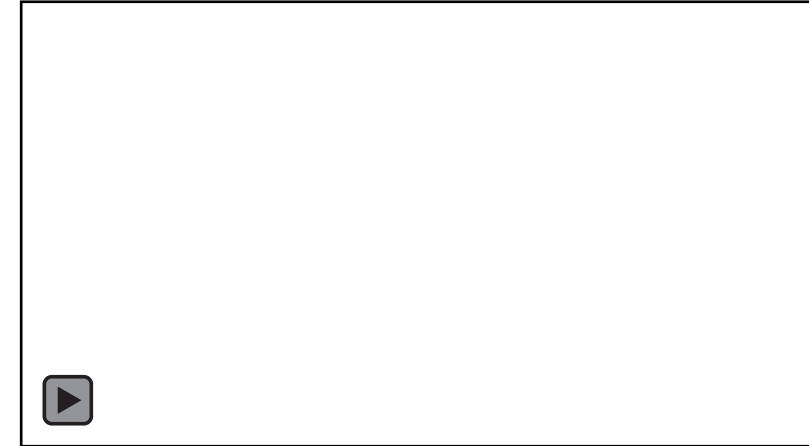
4 months

- Social/Emotional
 - Smiles and chuckles
 - Smiles, moves, or makes sounds to get your attention
- Cognitive
 - Anticipates feeding (opens mouth when hungry and sees breast or bottle)
 - Looks at hands with interest



6 months

- Physical Development
 - Gross motor:
 - Rolls from tummy to back
 - Pushes up with straight arms when on tummy (90°)
 - Tripods (leans on hands for support while sitting)
 - Fine motor:
 - Raking grasp
- Language/Communication
 - Blows “raspberries”
 - Makes squealing noises (consonants)



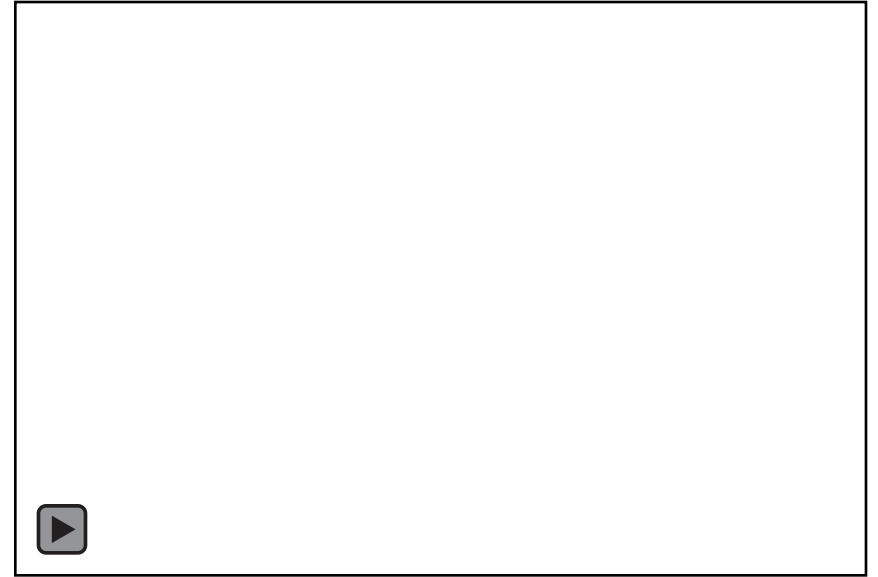
6 months

- Social/Emotional
 - Knows familiar people
 - Likes to look at self in mirror
 - Belly laughs
- Cognitive
 - Puts things in mouth to explore
 - Reaches to grab a toy
 - Close lips when done eating



9 months

- Physical Development
 - Gross motor:
 - Gets to sitting position on own
 - Sits without support
 - Fine motor:
 - Transfers objects in hands
 - Immature/Emerging pincer grasp
- Language/Communication
 - Stringing syllables like “mamamama”
 - Lifts arms to be picked up



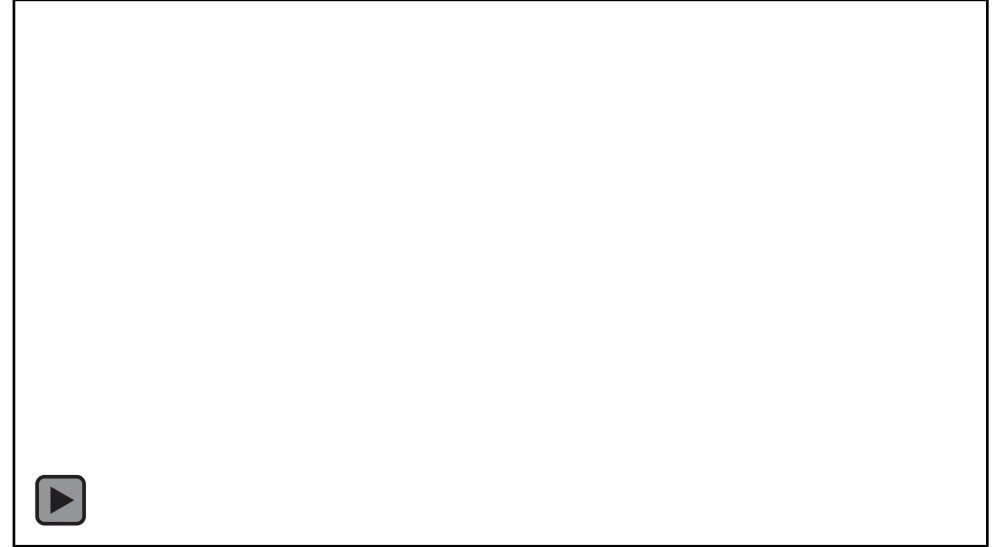
9 months

- Social/Emotional
 - Stranger danger (shy, clingy, fearful around strangers)
 - Several facial expressions (happy, sad, angry, surprised)
 - Looks when name is called
 - Separation anxiety (reacts when you leave)
 - Smiles/Laughs when play peek-a-boo
- Cognitive
 - Object permanence (looks for objects when put out of sight)
 - Bangs two items together



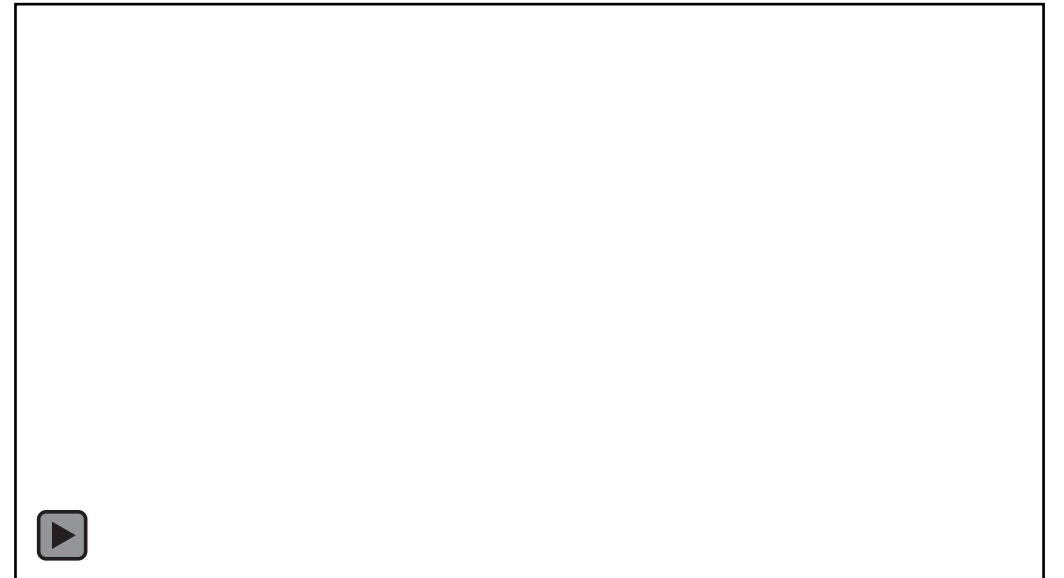
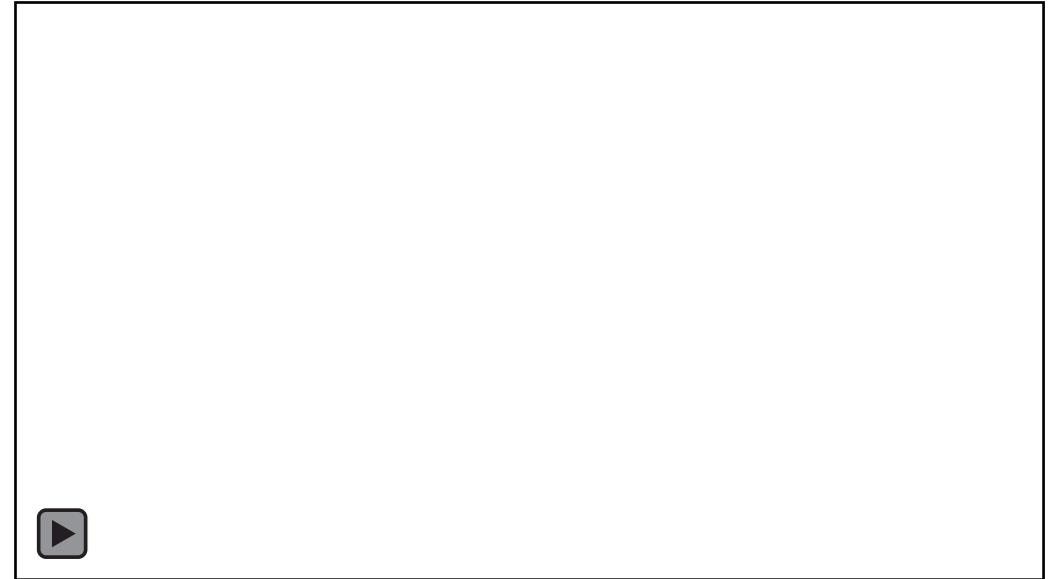
12 months (1 year)

- Physical Development
 - Gross motor:
 - Pulls to stand
 - Cruises (walks holding onto furniture)
 - **ONE** step with support
 - Fine motor:
 - Drinks from a cup without a lid with assistance
 - Mature pincer grasp



12 months (1 year)

- Language/Communication
 - Waves “bye-bye”
 - Calls parent specific name (mama, dada)
 - Understands “no” (pauses briefly)
- Social/Emotional
 - Looks for things he sees you hide, like a toy under a blanket
- Cognitive
 - Puts items in a container (**ONE** cube in a cup)



15 months

- Physical Development
 - Takes a few steps on own (**ONE** step *without* support)
- Language/Communication
 - **ONE** word besides “mama” or “dada” – immature jargon
 - Looks at a familiar object when you name it
 - **ONE** command with gesture
 - Points to ask for something



15 months

- Social/Emotional
 - Imitative play (copies other children while playing)
 - Shows you an object they like
 - Claps when excited
 - Shows you affection (hugs, kisses)
- Cognitive
 - Stacks two small objects (e.g. blocks)
 - Tries to use things the right way (e.g. phone, cup, book)

15 Months - Tries to use things the right way, like a phone, cup, or book



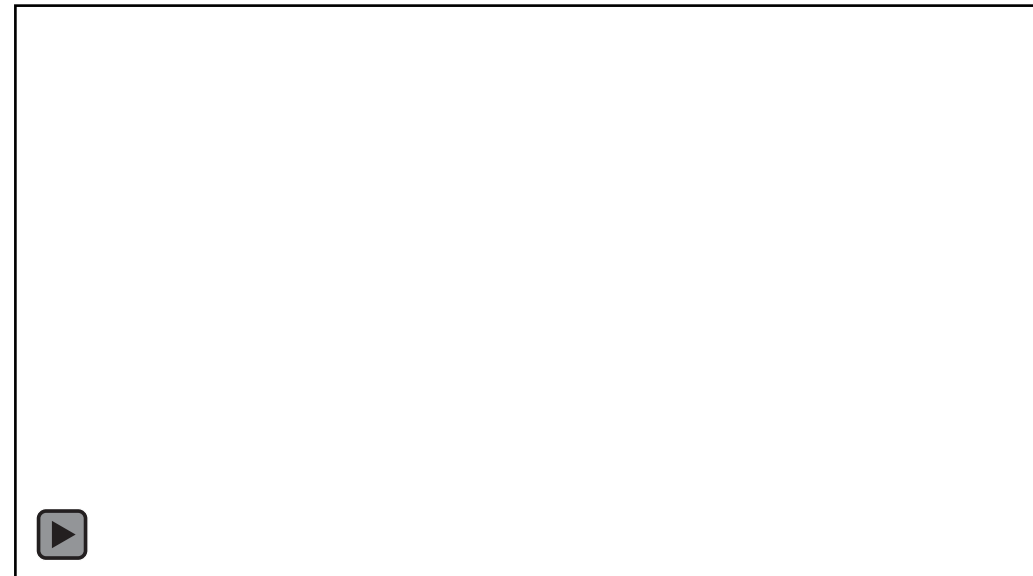
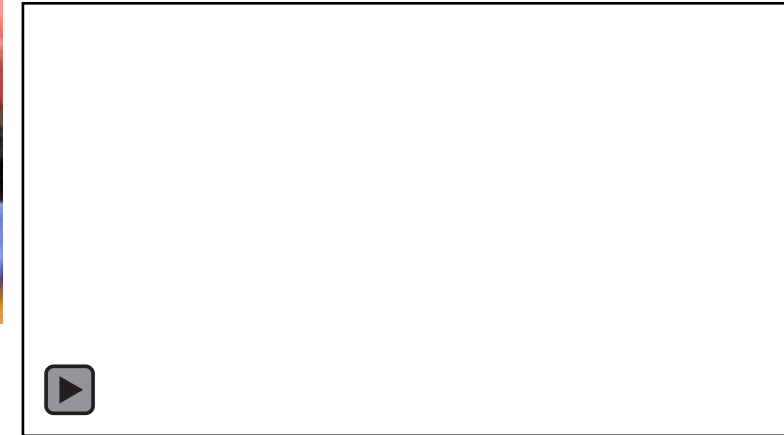
15 Months - Copies other children while playing, like taking toys out of a container when another child does



18 months (1.5 years)

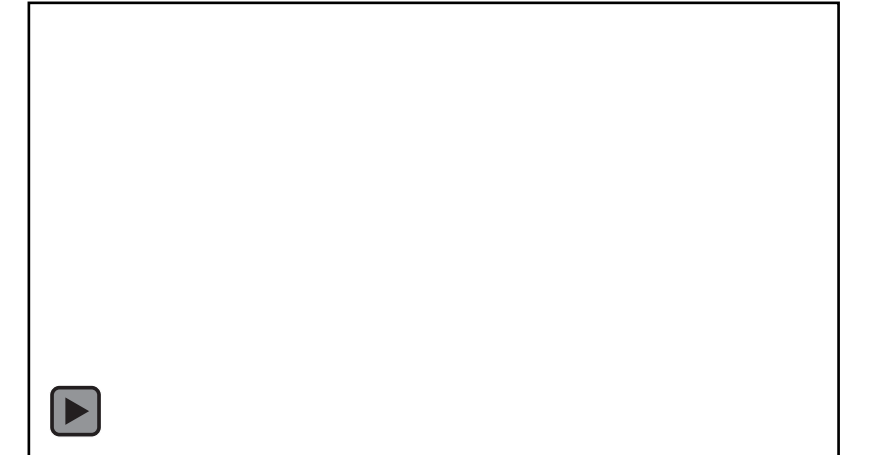
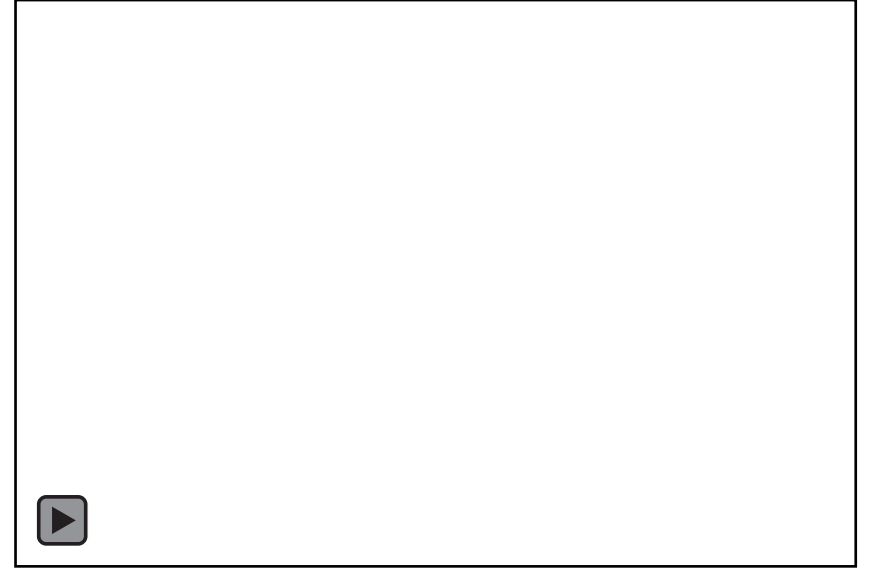


- Physical Development
 - Gross Motor:
 - Walks unassisted
 - Drinks from cup unassisted (some spills)
 - Climbs on/off couch without help
 - Fine Motor:
 - Scribbles (**ONE** mark on paper)
 - Tries to use spoon
- Language/Communication
 - 3 words in addition to “mama” or “dada”
 - **ONE**-step command *without* gesture



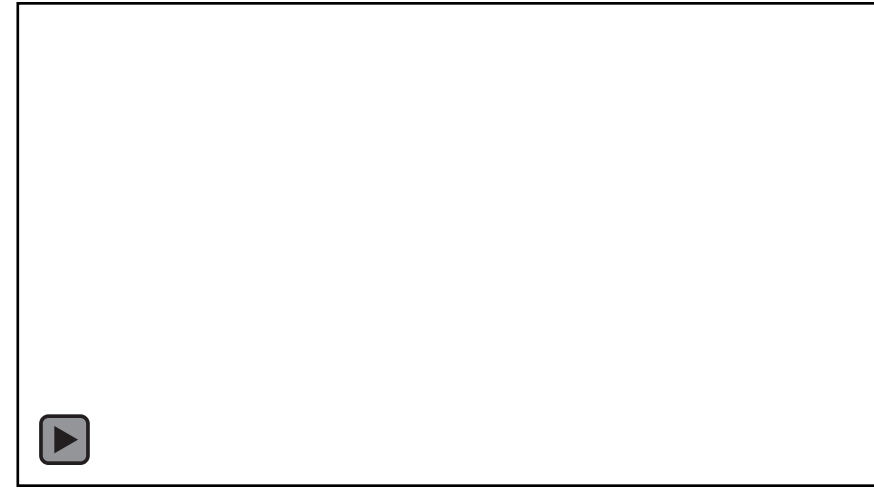
18 months (1.5 years)

- Social/Emotional
 - Moves away from you, but looks to make sure you are close
 - Points to show you something interesting
 - Helps you dress by pushing arm through sleeve or lifting foot
- Cognitive
 - Copies chores
 - Plays with toys simply (e.g. pushing a car)



24 months (2 years)

- Physical Development
 - Kicks a ball
 - Runs
 - Walks a few stairs with or without help (**TWO** up, **TWO** down)
- Language/Communication
 - Points to things in a book
 - **TWO** words phrase (e.g. "More milk") – mature jargon
 - Points to **TWO** body parts



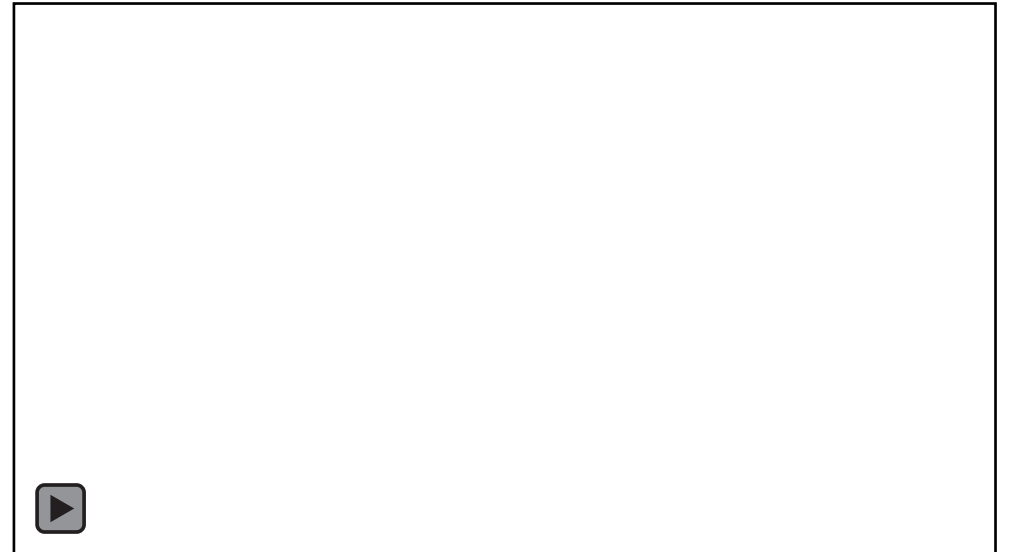
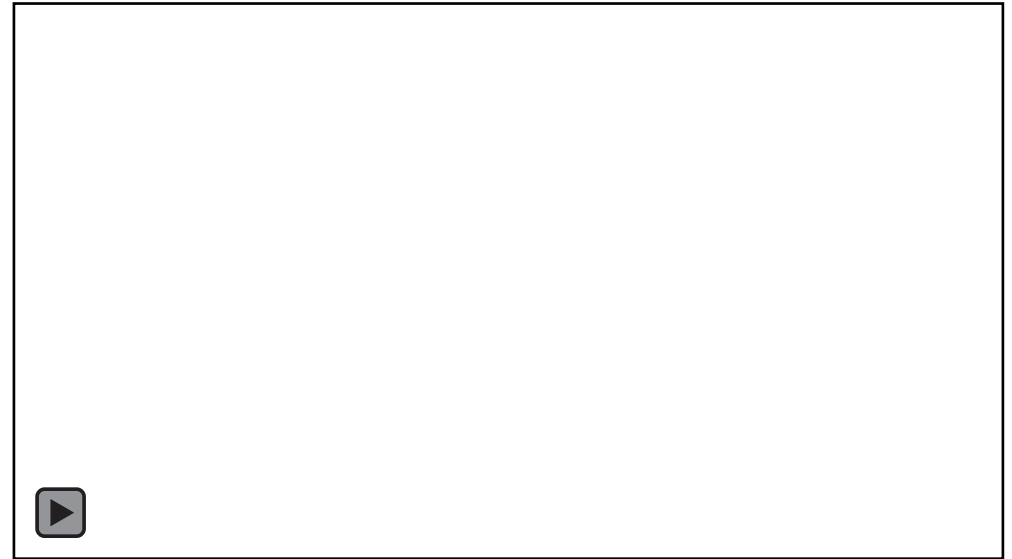
24 months (2 years)



- Social/Emotional
 - Notices when others are hurt/upset
 - Looks at your face to see how you react in a new situation
- Cognitive
 - Tries to use switches, knobs, buttons
 - Plays with more than one toy at a time

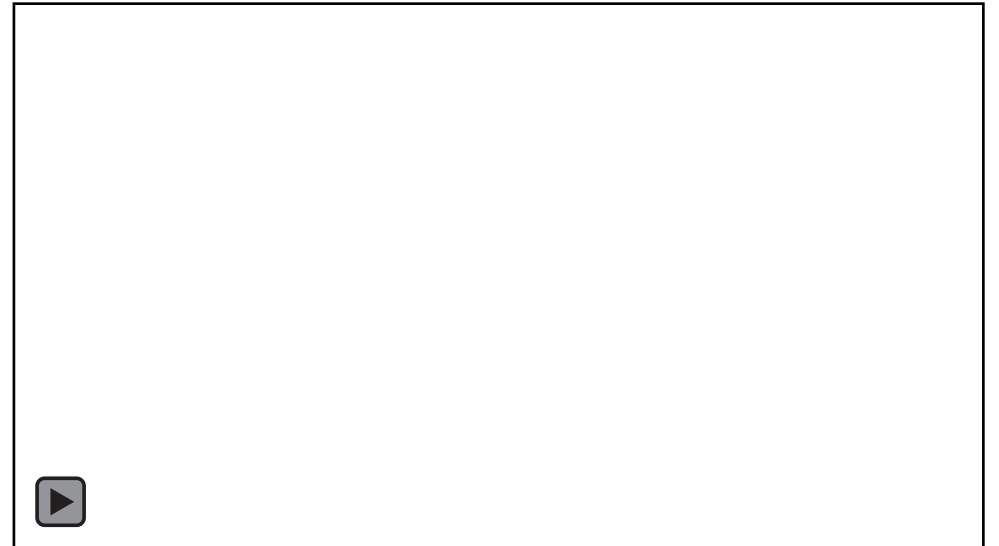
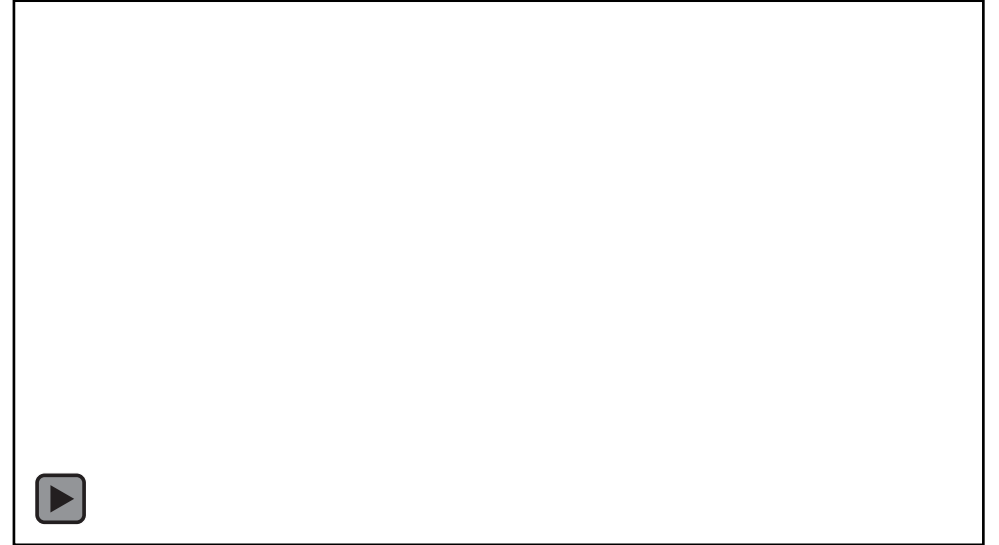
30 months (2.5 years)

- Physical Development
 - Gross Motor:
 - Takes some clothes off alone
 - Jumps off the ground with **TWO** feet
 - Fine Motor:
 - Turns book pages one at a time
 - Turns doorknob
- Language/Communication
 - ~50 words
 - “I,” “me,” or “we”
 - **TWO**-step command without gestures
 - 50% intelligible (2/4)



30 months (2.5 years)

- Social/Emotional
 - Parallel play (plays next to children)
 - “Look at me!” (shows you what they can do)
 - Follows simple routines like clean-up time
- Cognitive
 - Simple problem-solving skills (e.g. standing on a stool to reach something)
 - One color recognized



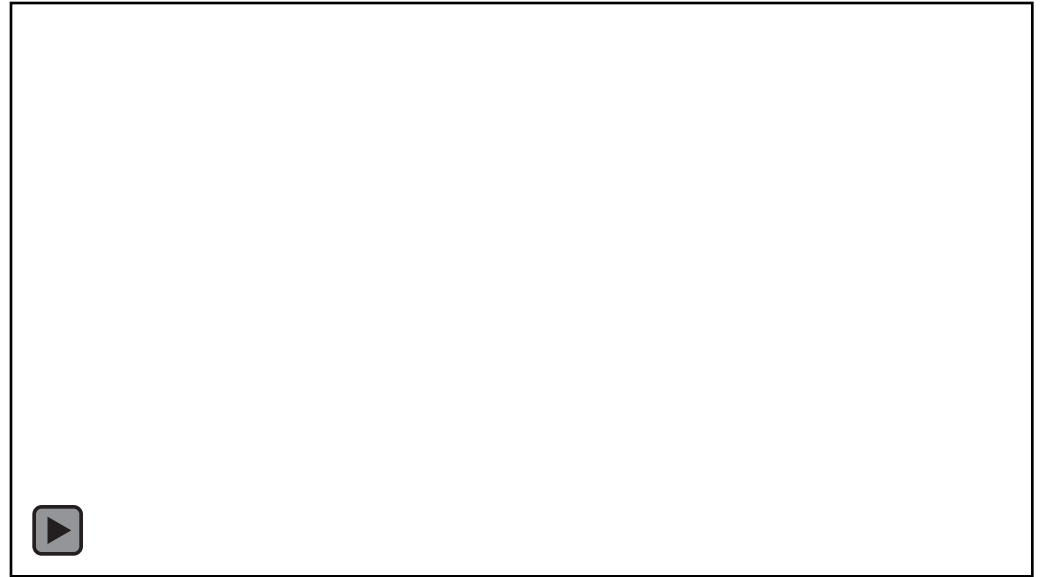
3 years

- Physical Development
 - Gross motor:
 - **3**-wheeler (tricycle)
 - **3** off the ground (2 arms, 1 foot, balances on 1 foot)
 - Fine motor:
 - Strings items together (e.g. beads)
 - Puts on some clothes alone
 - Uses a fork
- Language/Communication
 - **3** word sentences
 - Who/What/Why questions
 - Converses with at least two back-and-forth exchanges
 - 75% intelligible (**3/4**)



3 years

- Social/Emotional
 - Calms down with separation within 10 minutes (e.g. daycare drop off)
 - Cooperative/Shared play (notices other children and joins them to play)
- Cognitive
 - Draws a circle
 - Avoids touching hot objects when warned



4 years

- Physical Development
 - Gross Motor:
 - Catches a large ball most of the time
 - Stairs: 1 up, 1 down
 - Fine Motor:
 - Unbuttons some buttons
 - Holds crayon/pencil between fingers and thumb
- Language/Communication
 - **4+** word sentences
 - Answers simple questions (“what is a coat for?”)
 - 100% intelligible (**4/4**)



4 years

- Social/Emotional
 - Imaginary play (pretends to be something else)
 - Comforts others
 - Avoids danger
 - Likes to be a “helper;” changes behavior based on situation
- Cognitive
 - Daytime potty trained
 - Names **4** colors
 - Draws a person with ~**4** body parts
 - Draws a cross and square



5 years

- Physical Development
 - Hops on one foot
 - Skips
- Language/Communication
 - Tells a story with at least two events
 - Recognizes simple rhymes (bat-cat, ball-tall)
 - Answers simple questions about a book or story



5 years

- Social/Emotional
 - Follows rules, takes turns
 - Does simple chores at home (e.g. matching socks, clearing table after eating)
- Cognitive
 - Counts to 10
 - 5-10 minute attention span
 - Draws a triangle
 - Writes some letters in name
 - Names some numbers and letters when point to them



Shapes by Age – Cheat Sheet

3

5

4

4

$\frac{1}{2}$

6

7

8

Red Flags for Developmental Delays

- Milestone regression
- Not walking by 18 months
- Failed to develop 3 real words by 18 months
- Tone abnormalities

Threats to Development

- Chronic disease, physical trauma, abuse, and neglect
- Adverse childhood experiences (ACEs) = potentially traumatic events
- SDOH
 - Insecure or inappropriate housing
 - Food insecurity
 - Poverty



Child Development II

Stage Theories of
Development

Sara Ritchie, MD

Developmental Theory

Over the years, psychologists have proposed a variety of perspectives on how children develop cognitively, which can add useful insights into how children learn, enabling clinicians and caregivers to optimize development by modeling and teaching to specific developmental stages.



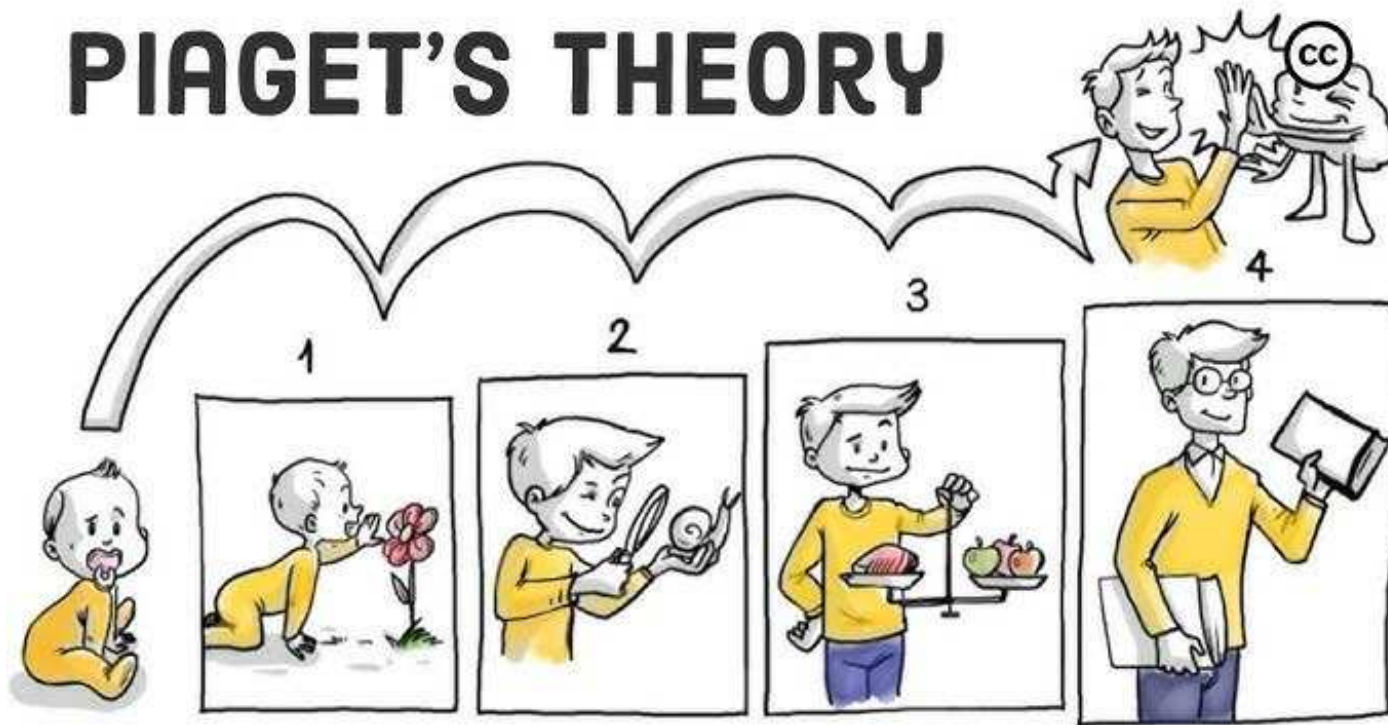
Piaget's Theory of Cognitive Development

Jean Piaget (1896-1980)

- Swiss psychologist specializing in child development
- Ideas widely popularized in 1960s
- Led to the emergence of the study of development as a major sub-discipline in psychology

- Piaget's Theory of Cognitive Development
 - Sensorimotor (~Birth – 2 years)
 - Preoperational Stage (~2 – 6/7 years)
 - Concrete Operational Stage (~7 – 12 years)
 - Former Operational Stage (~12+)
- Across cultures and places, people tend to follow these stages in order
- Time span to complete stage may vary, and not all will reach formal operational stage

Stage 1: Sensorimotor (Birth – 2 years)



- Infants experience the world through movement and senses
- Egocentric (cannot perceive the world from others' viewpoints)
- **Cognitive goal: object permanence**

Stage 2: Preoperational (2 – 6/7 years)

- Interact with the world through language and imagery
- Children do not yet understand concrete logic
 - Pretend play; Magical thinking
 - Animism = everything is alive and has feelings
- Still egocentric
- **Cognitive goal: using symbols in thinking**
 - Symbolic Function Substage (2-4yo): Use symbols to represent physical models of the world around them (people not drawn to scale, pieces of paper are plates)
 - Intuitive Thought Substage (4-7yo): Increased curiosity, ask many questions, begin primitive reasoning



Stage 3: Concrete Operational (7 – 11 years)

- Children can converse and think logically
- Understand reversibility and classification
 - Reversibility: pour water from large beaker to small; can go back
 - Classification: sequence and serialize
- **Cognitive goal: logical thinking**

SENSORIMOTOR STAGE

The child begins to interact with the environment.



0-2

PREOPERATIONAL STAGE

The child begins to represent the world symbolically.



2-6 or 7

CONCRETE OPERATIONAL STAGE

The child learns rules such as conservation.

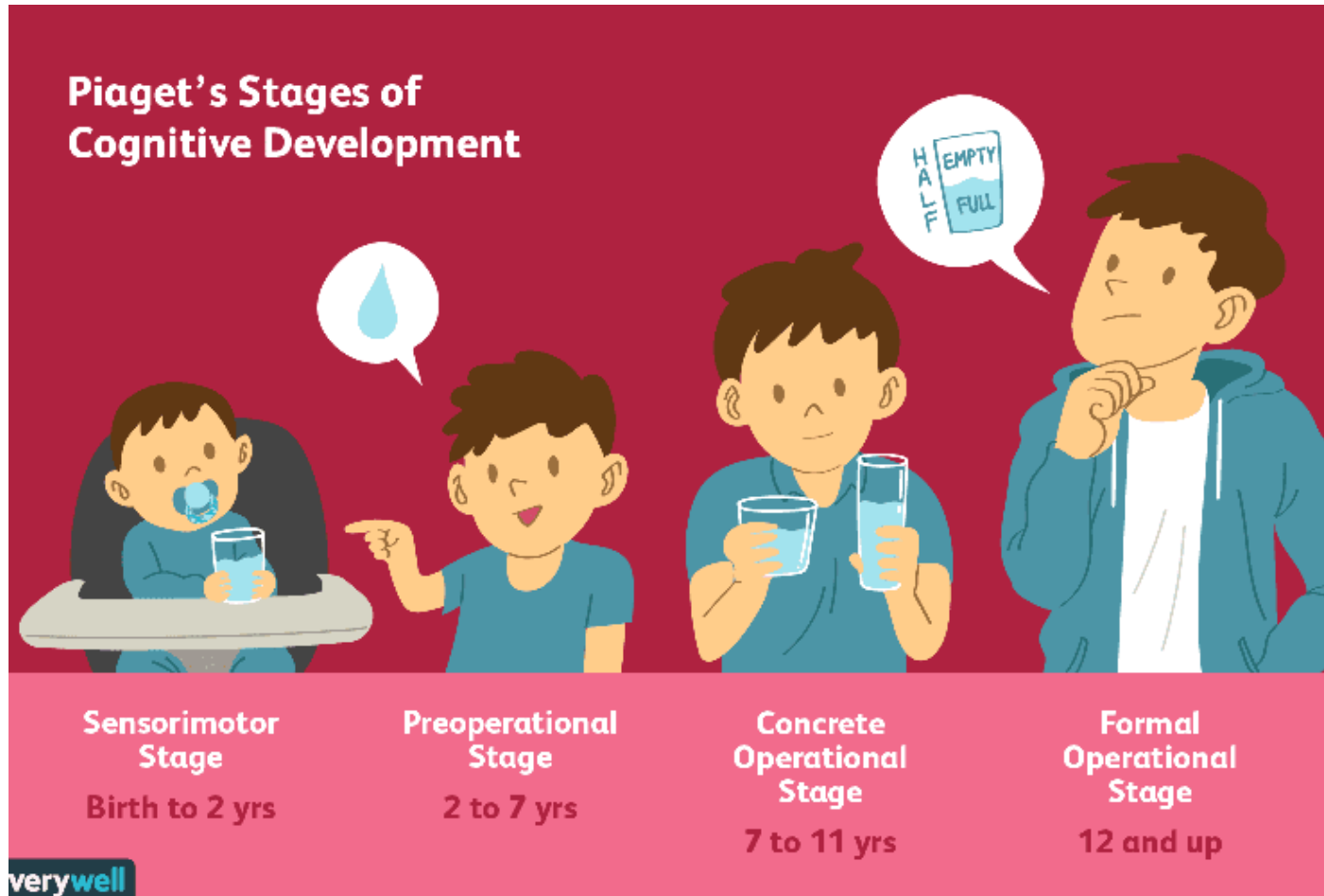


FORMAL OPERATIONAL STAGE

The adolescent can transcend the concrete situation and think about the future.



Stage 4: Formal operational (12+ years)



- Develop ideas in the abstract world, without physical constraints
- Easily converse and think logically
 - Deductive logic/reasoning
 - Scientific thinking with hypotheses
- Advance skills toward problem solving
- Tackle moral, philosophical, ethical, social, and political issues

Practice Question

When D'Andre was 5 months old, he looked at a toy train, but when his view of the train was blocked, he did not search for it. Now that he is 9 months old, he does search for it, reflecting the presence of:

- A. Self-differentiation
- B. Assimilation
- C. Schemata
- D. Object permanence

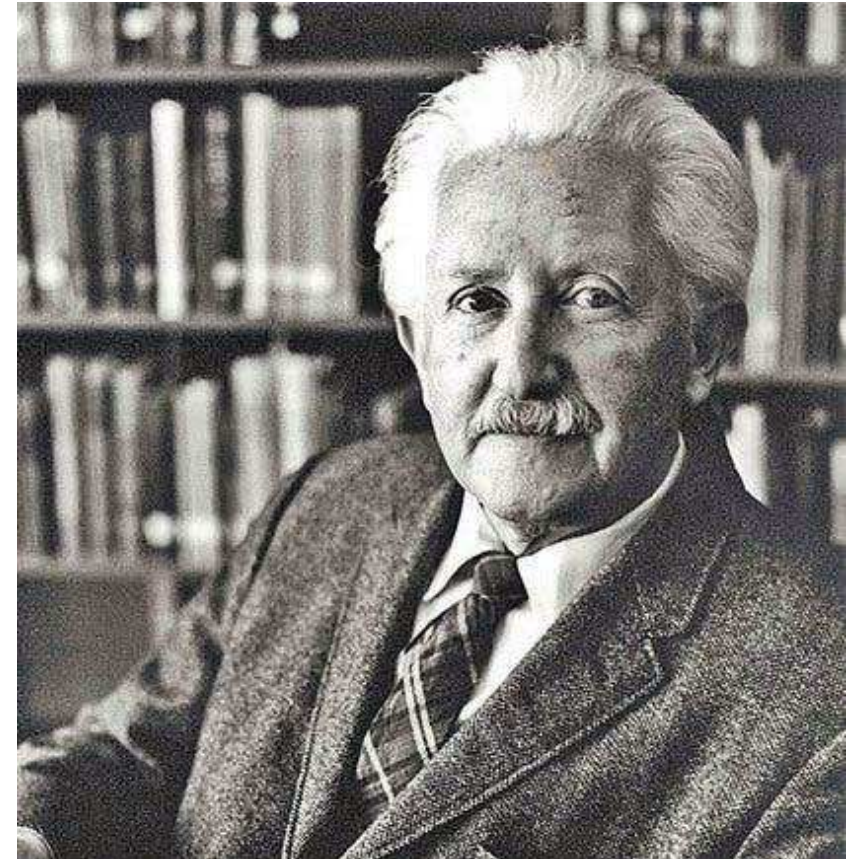
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Erikson's Stages of Psychosocial Development

- Erik Erikson (1902-1994)
 - Danish German-American child psychoanalyst
 - Psychosocial development ties to development of reasoning skills
 - Coined the phrase “identity crisis”
- 8 sequential stages of psychosocial development
- Each stage is characterized by an opposing tendency with which an individual is confronted with a **conflict** and must resolve in order to develop a positive, adaptive or negative, maladaptive trait



Stages of psychosocial development according to Erik Erikson

Stage	Period	Opposing tendencies	Adaptive trait	Factors that promote the development of adaptive traits
Stage 1	<u>Infancy</u>	Basic trust vs. basic mistrust	Hope	Fulfillment of emotional and physical needs (e.g., experiencing reliability and affection, access to food)
Stage 2	Early childhood	<u>Autonomy</u> vs. shame, doubt	Will	Establishing a balance between dependence/safety and independence/self-control
Stage 3	Play age	Initiative vs. guilt	Purpose	Encouragement and guidance in social interactions, self-assertion, and cooperation
Stage 4	School age	Industry vs. inferiority ☹	Competence	Reasonable academic expectations, reinforcing initiative, providing praise for accomplishments
Stage 5	<u>Adolescence</u>	Identity integration vs. identity confusion	Fidelity	Exploration of self-identity, personal goals, sexual and occupational experiences
Stage 6	Young adulthood	Intimacy vs. isolation	Love	Formation of friendships and relationships
Stage 7	Adulthood	Generativity vs. stagnation, self-absorption ☹	Care	Involvement in community, contributing to society, engaging with younger generations (e.g., parenting, teaching)
Stage 8	Old age	Integrity vs. despair	Wisdom	Retrospection and recognition of life accomplishments

A black stethoscope is positioned diagonally across the frame, resting on a white computer keyboard. The stethoscope's chest piece is on the left, and its two earpieces extend towards the bottom right. The keyboard is a standard QWERTY layout with white keys and black lettering. The background is a plain, light-colored surface.

Psychosocial Development Applied

Noting a patient's psychosocial stage can help determine an efficacious treatment plan

- For example, a 1-year-old in the hospital for treatment of infection may be most worried about a caregiver leaving and may need to be allowed to stay with a caregiver at all times during treatment.
- Whereas a teen in the hospital for treatment may be most worried about missing out on peer time and may benefit from visits or video calls with friends while undergoing a stay for treatment.

Practice Question

At each stage of Erikson's theory of psychosocial development, people experience a(n) _____ that serves as a turning point.

- A. Functionalist
- B. Wisdom
- C. Conflict
- D. Symbolic Interactionism

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- A. Functionalist
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- C. Conflict**
- D. Symbolic Interactionism

Practice Question

The stage that occurs between birth and one year of age is concerned with:

- A. Autonomy vs. Shame and Doubt
- B. Trust vs Mistrust
- C. Identity vs Role Confusion
- D. Intimacy vs Isolation

Practice Question

The stage that occurs between birth and one year of age is concerned with:

- A. Autonomy vs. Shame and Doubt
- B. Trust vs Mistrust**
- C. Identity vs Role Confusion
- D. Intimacy vs Isolation

Practice Question

Jane, a preschooler, insists on dressing herself each morning for school, even though she generally selects mismatching outfits, misses buttons, and wears her shoes on the wrong feet. When her mother tries to dress Jane or fix her outfit, Jane brushes her mother off and insists on doing it herself. What stage of psychosocial development best describes Jane's behavior?

- A. Intimacy vs Isolation
- B. Identity vs Role Confusion
- C. Trust vs Mistrust
- D. Autonomy vs Shame and Doubt

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- D. Autonomy vs Shame and Doubt**

Practice Question

Eight-year old Steven has a difficult time making friends at school. He has trouble completing his schoolwork accurately and on time, and as a result, receives little positive feedback from his teacher and parents. According to Erikson's theory, failure at this stage of development results in _____?

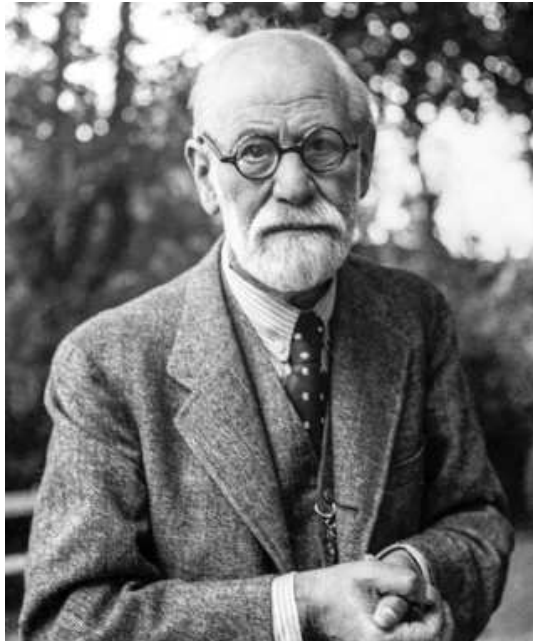
- A. Feelings of inferiority
- B. Pride in being female
- C. Ego Identity
- D. Autonomy vs Shame and Doubt

Practice Question

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- B. Pride in being female
- C. Ego Identity
- D. Autonomy vs Shame and Doubt

Freudian Development Theory



Sigmund Freud (1856-1939)

- Austrian neurologist and founder of psychoanalysis
- Among first attempts to bring psychology under same scientific structure and methodology of medicine
- 5 distinct phases, each symbolizes the concentration of the libido
- One must progress sequentially through each stage to mature into a well-functioning adult

Freud's Human Psyche

3 Components of the Human Psyche

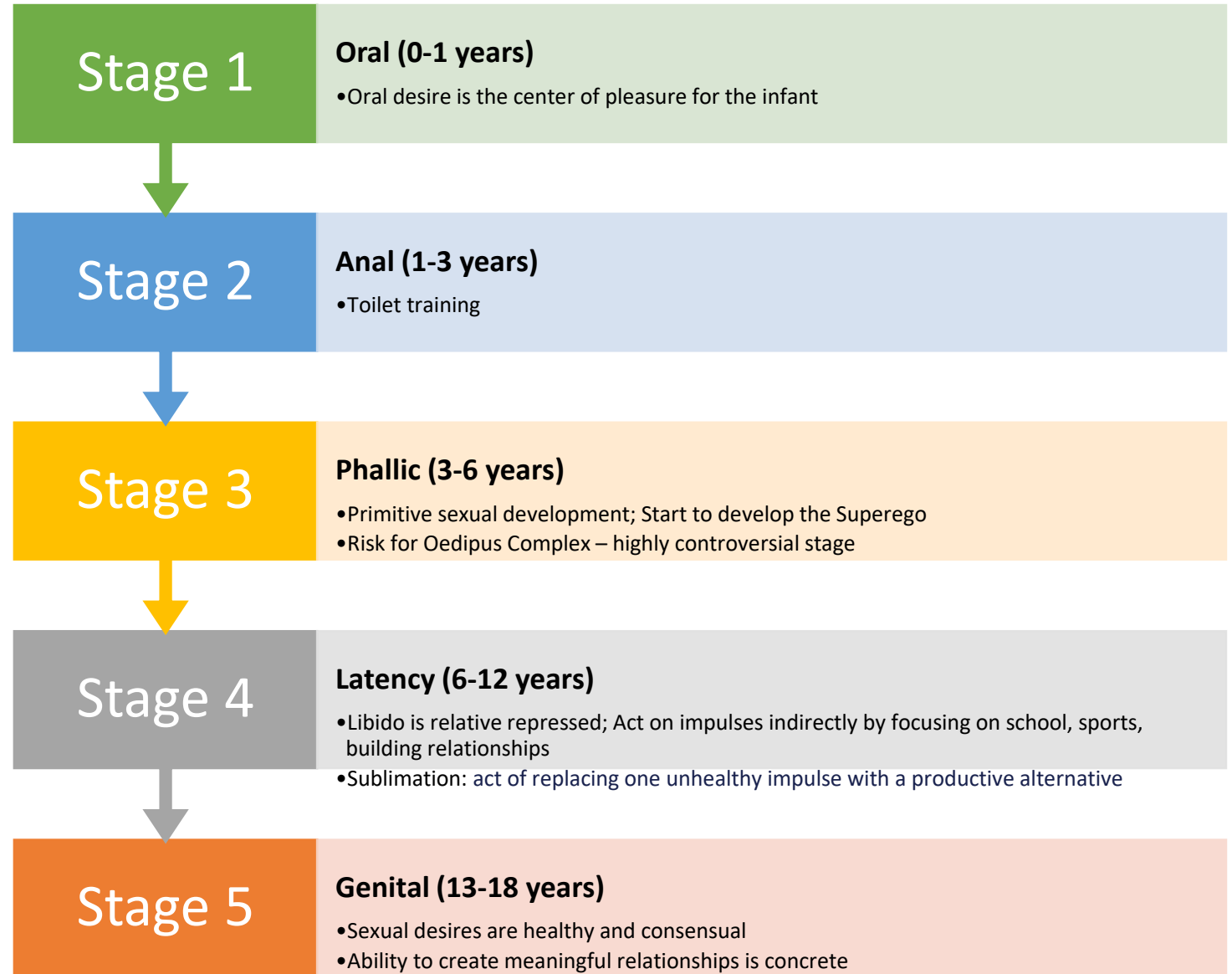
Id – unconscious and instinctual, immediate gratification (present from birth); pleasure principle

Ego – decision-making; reality principle (seeks satisfaction via practical strategies); mediates the id and the “real” world

Superego – incorporates morals and societal values; pride vs shame based on our decisions; moral compass



Freud's Psychosexual Stages of Development



Fixation and Neurosis

Can become **fixated** within a stage if can't complete successfully: E.g. stuck in Oral Stage and prone for smoking, nail biting, etc. Child is left wanting and unsatisfied.

Fixation leads to **Neurosis** in adulthood.

Practice Question

A 41-year old woman presents to the clinic with complaints of struggles with anxiety and mild depression. She feels like it keeps her from making friends or sustaining meaningful relationships. The patient frequently remarks about the possibility that her working way too much is why she has no close friends. Upon further discussion with the patient, several instances of possible trauma arise. Which of the following possible traumas is most likely associated with the patient's chief complaint?

- A. Excessive disciplining at the age of 2 by a nanny
- B. Her father had to work extra hours and often had to travel around the time when the patient started kindergarten
- C. Being bullied in her later elementary school years and early middle school
- D. The patient's grandfather, whom she was close to, passed away during her junior year of high school

Practice Question

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Answer Explained

- Stage IV and V imply healthy relationships, but stage IV includes a child displacing their impulses through sublimation. Therefore, the answer is choice number 3.
- Sublimation is the act of replacing one unhealthy impulse with a productive alternative.
- The patient likely learned to distract herself from the trauma of being bullied by focusing on her schoolwork.
- Excessive disciplining at the age of 2 would likely lead to dysfunction during the anal stage. This could lead to the patient being obsessed with work, but it would not be as likely to have relationship deficits.

Practice Question

A pediatric patient states they have increased libido, a desire to be separate from their parents, and a matured sense of self. Which of the following Freudian stages of development best describes this patient?

- A. Genital
- B. Latency
- C. Phallic
- D. Oral

Practice Question

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- A. Genital**
- B. Latency
- C. Phallic
- D. Oral

Stage V (genital) occurs between 13-18 years of age. The individual's ego becomes fully developed during this stage, and they are subsequently seeking independence. Their ability to create meaningful and lasting relationships is concrete, and their sexual desires and activity are healthy and consensual.



Questions/Feedback?

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