HUMAN DEVELOPMENT · STUDY GUIDE

Final Exam Study Guide

The final covers all fourteen chapters. Each chapter here is shorter than in the exam guides: three paragraphs of what to know, the points to lock in, the chapter diagram, one table, one worked case, the traps and six new self-test items. If a chapter feels shaky, go back to its exam guide for the full treatment. The long cram sheet at the end pulls every stage, name and number in the course into one place. Work two chapters a day and the whole lifespan fits into a week.

WHAT THIS GUIDE COVERS

- Foundations: chapters 1 and 2 (studying development; theories).
- The beginning: chapters 3 and 4 (genetics and prenatal development; birth and the newborn).
- Infancy and early childhood: chapters 5, 6 and 7 (body and mind; social and emotional; early childhood).
- Middle childhood and adolescence: chapters 8, 9 and 10 (middle childhood; adolescent body and mind; identity and relationships).
- Adulthood and the end of life: chapters 11 to 14 (early, middle and late adulthood; death, dying and bereavement).
- Every chapter carries what to know, a diagram, a table, a worked case, the traps and a six-item self-test, and the cram sheet holds every stage and number.

CHAPTER 1

Studying Human Development

Read it in full: **Chapter 1 in the textbook**. Practice it in the lab: **Three Domains** and **Research Designs**.

What to know

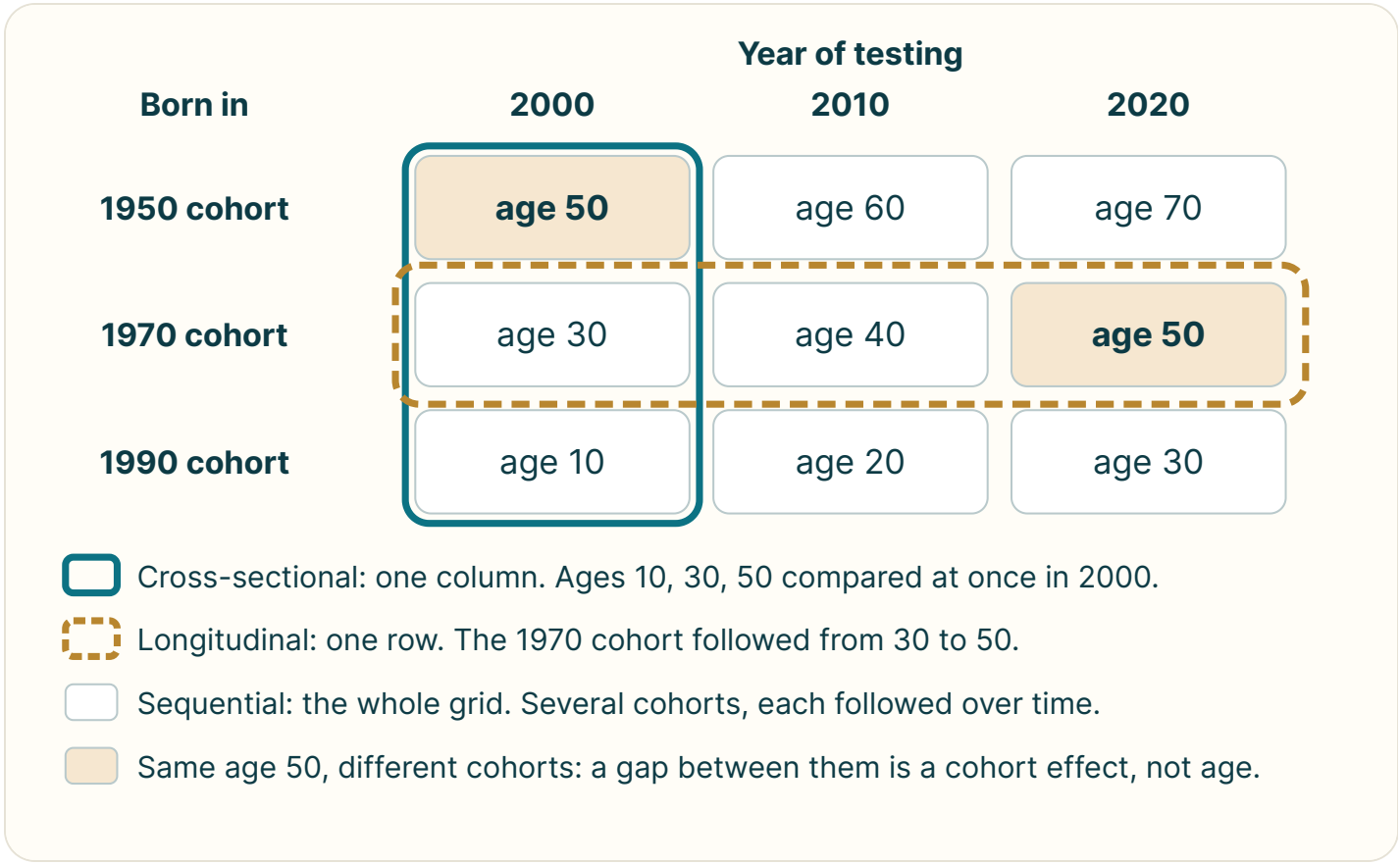
Human development is the scientific study of how and why people change, and stay the same, from conception to death. Development is orderly, relatively enduring change: gains, losses and reorganizations, across three interacting domains (physical, cognitive, psychosocial) and a set of approximate periods from prenatal life to late adulthood.

Nature and nurture always interact. The genotype meets an environment to produce the phenotype, genes set a range of reaction, and epigenetics changes gene expression without changing DNA. Heritability is a population statistic, not a personal limit. Three debates organize the field: continuity or stages, stability or change, universal or contextual, and the modern answer is usually both.

Cross-sectional studies compare ages at one time but confound age with cohort; longitudinal studies follow the same people but suffer attrition; sequential studies combine both and separate age from cohort. Ethics require consent from guardians, assent from children, protection from harm, confidentiality, the right to withdraw and debriefing.

LOCK THESE IN

- Development is orderly, relatively enduring change: gains, losses and reorganizations, across the whole lifespan.
- Three domains: physical (body, brain), cognitive (mind), psychosocial (emotion, relationships). They interact.
- Periods: prenatal; infancy and toddlerhood to about 2; early childhood 2 to 6; middle childhood 6 to 11; adolescence 11 to 18; early adulthood 18 to 40; middle 40 to 65; late 65 on. Boundaries are approximate.
- Nature and nurture interact. Genotype plus environment gives the phenotype. Genes set a range of reaction.
- Epigenetics changes gene expression, not the DNA sequence. Heritability describes populations, not one person.
- Three debates: continuity or stages, stability or change, universal or contextual. The usual answer is both.



Research designs on one grid. Each cell is a birth cohort tested in a given year, and the age is the test year minus the birth year. A column is cross-sectional, a row is longitudinal, and the whole grid is sequential.

Key terms and comparisons

Term	What it means	Example
Physical domain	Body, brain, motor skills, senses, health	When and why children learn to walk
Cognitive domain	Thinking, language, memory, reasoning	Grasping that others have their own minds
Psychosocial domain	Emotion, personality, identity, relationships	A toddler protests when a parent leaves
Maturation	Genetically timed unfolding of the body	Sitting before crawling, crawling before walking
Range of reaction	Genes set limits; environment picks the spot	Height potential reached only with good nutrition
Canalization	A trait buffered to follow a set path	Babbling appears in nearly all infants
Gene and environment correlation	Genes and settings travel together	Musical parents, musical home
Epigenetics	Experience switches genes on or off; DNA unchanged	Nurturing care dials down stress genes
Heritability	Share of population variation tied to genes	Height is heritable, yet averages rose
Cohort effect	Group difference from era of birth, not age	Older adults scored lower on a tech test

Worked case

WORKED CASE 1 · COHORT OR AGE?

A researcher tests 30-year-olds and 70-year-olds this month on a smartphone skills test. The 70-year-olds score lower. A news story says "aging erodes tech skill." Is that claim supported?

STEP 1 · NAME THE DESIGN

Two age groups tested at one time is a cross-sectional design.

STEP 2 · LIST WHAT DIFFERS BETWEEN THE GROUPS

Age differs, but so does the era each group grew up in. The older group grew up before smartphones existed.

STEP 3 · NAME THE CONFOUND

Age and cohort are tangled together. The gap may be a **cohort effect**, not a true age effect.

STEP 4 · PICK A BETTER DESIGN

A sequential design would compare 70-year-olds from different birth years, or follow each group forward. Only then can age be pulled apart from cohort.

ANSWER

The claim is not supported. A cross-sectional difference is not proof of aging.

TRAPS PEOPLE FALL INTO

- **Thinking development means only growth.** Losses and reorganizations count too, and change continues through old age.
- **Treating age bands as fixed.** The periods are approximate and shaped by culture and era.
- **Picking nature or nurture.** Every trait comes from both, interacting. The right question is how they work together.
- **Reading heritability as personal destiny.** It is a population statistic, and highly heritable traits can still change.

Chapter 1 self-test · six items

1. Which period does the chapter place at about 11 to 18?

A. Adolescence
B. Middle childhood
C. Early adulthood
D. Early childhood

A. Adolescence Adolescence runs about 11 to 18; the boundaries are approximate.

2. Genes set an upper and lower limit, and the environment decides where a trait lands. This is the

A. cohort effect
B. sequential design
C. psychosocial domain
D. range of reaction

D. range of reaction Height potential reached only with good nutrition is the classic case.

3. A trait is called 70% heritable. This describes

A. the share of one person's trait
B. a fixed ceiling for a child
C. variation in a population
D. the DNA sequence itself

C. variation in a population Heritability is about groups, not personal destiny.

4. Which debate do Piaget and Erikson anchor on the stage side?

A. Stability versus change
B. Continuity versus stages
C. Universal versus contextual
D. Nature versus nurture

B. Continuity versus stages They are the great stage theorists.

5. Which problem most threatens a longitudinal study?

A. Cohort confounding at one time
B. Attrition
C. Having no individual data
D. Being too fast and cheap

B. Attrition Participants drop out, and dropouts may differ from those who stay.

6. A child's own agreement to join a study, in words she understands, is

A. consent
B. debriefing
C. assent
D. confidentiality

C. assent Guardians consent; children assent and may stop at any time.

CHAPTER 2

Theories of Development

Read it in full: **Chapter 2 in the textbook**. Practice it in the lab: **Erikson Stages** and **Bronfenbrenner Systems**.

What to know

Theories organize observations and predict development. Psychoanalytic theory centers hidden drives and early relationships: Freud's id, ego and superego and his psychosexual stages, and Erikson's eight lifelong psychosocial crises, each yielding a virtue from hope to wisdom.

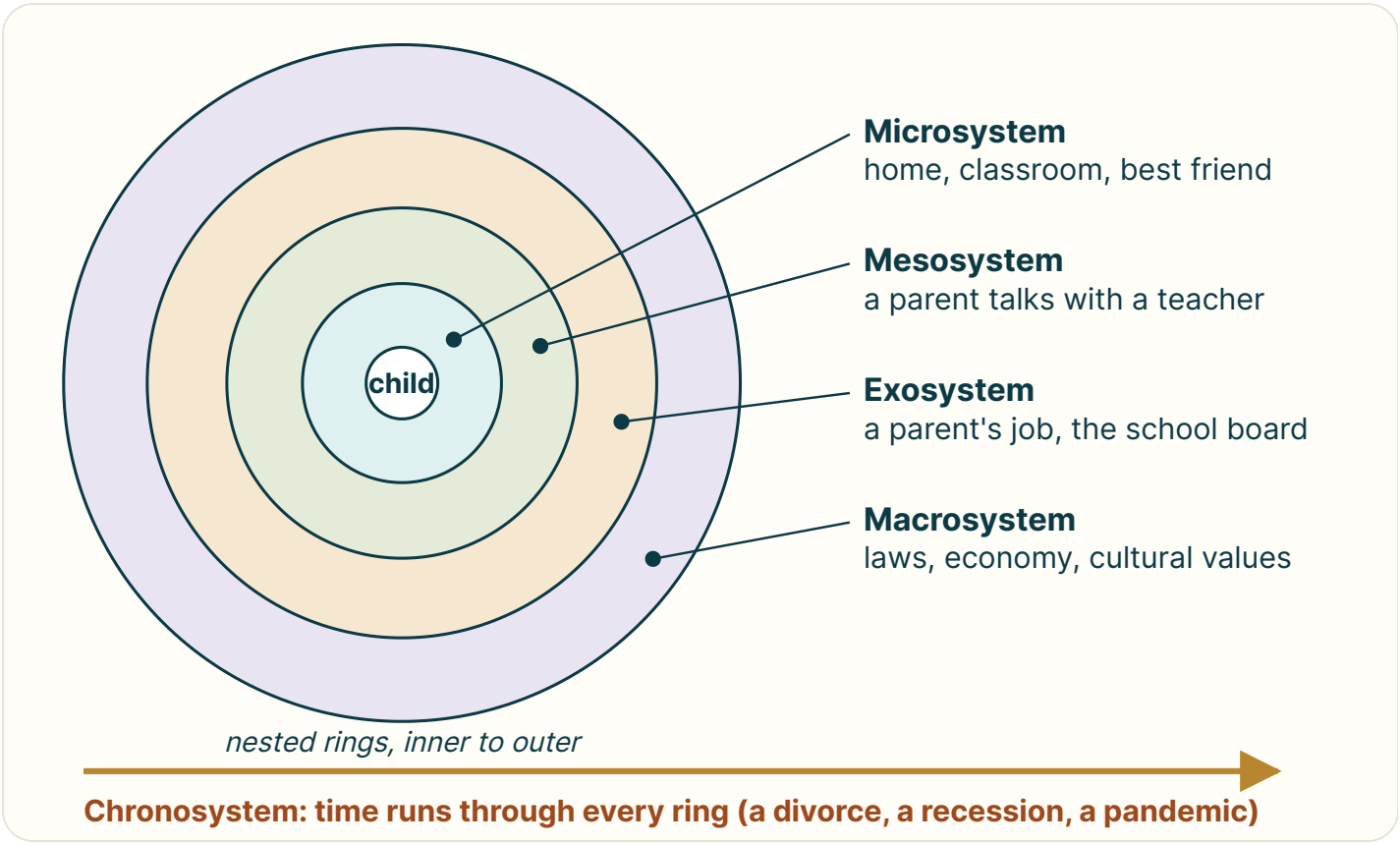
Learning theories explain continuous change driven by experience: classical conditioning (Pavlov, Watson), operant conditioning (Skinner), where positive adds and negative removes, and Bandura's observational learning and self-efficacy. Cognitive theories map thinking: Piaget's

schemas, assimilation, accommodation and four stages; Kohlberg's moral levels; Vygotsky's ZPD and scaffolding; and gradual information processing.

Bronfenbrenner's ecological systems place the child inside micro, meso, exo, macro and chrono systems that act through everyday proximal processes. The theories differ on nature and nurture, continuity and stages, active and passive and stability and change. They are complementary lenses, and good practice is eclectic.

LOCK THESE IN

- Four families: psychoanalytic, learning, cognitive, contextual. They are lenses, not teams.
- Freud: id, ego, superego; stages oral, anal, phallic, latency, genital; fixation. Specifics doubted, framing kept.
- Erikson: eight psychosocial crises across life, each with a virtue, from trust (hope) to integrity (wisdom).
- Classical conditioning pairs signals (Pavlov). Operant conditioning uses consequences (Skinner). Positive adds, negative removes.
- Bandura: observational learning (Bobo doll) and self-efficacy.
- Piaget: schemas, assimilation, accommodation, equilibration; sensorimotor, preoperational, concrete, formal.



Bronfenbrenner's nested systems. The child sits inside the microsystem, with the mesosystem, exosystem and macrosystem around it. The chronosystem is time, which runs through every ring.

Reinforcement and punishment

Procedure	What happens	Effect	Example
Positive reinforcement	Add something pleasant	Behavior goes up	Praise for sharing, more sharing
Negative reinforcement	Remove something unpleasant	Behavior goes up	Nagging stops when chores are done
Positive punishment	Add something unpleasant	Behavior goes down	Scolding after a tantrum
Negative punishment	Remove something pleasant	Behavior goes down	Losing screen time for hitting

Worked case

WORKED CASE 1 · NAMING THE OPERANT PROCEDURE

Fourteen-year-old Theo starts doing the dishes right after dinner because his mother stops reminding him once they are done. Name the procedure.

STEP 1 · DID THE BEHAVIOR GO UP OR DOWN?

Doing dishes goes **up**, so this is reinforcement.

STEP 2 · WAS SOMETHING ADDED OR REMOVED?

The reminders (something unpleasant) are **removed**, so this is negative.

STEP 3 · PUT THE TWO TOGETHER

Removed plus behavior up is **negative reinforcement**.

CHECK IT

It is not punishment. Punishment always makes a behavior less likely.

TRAPS PEOPLE FALL INTO

- **Reading negative as bad.** Negative means removed. Negative reinforcement still makes a behavior more likely.
- **Mixing up negative reinforcement and punishment.** Reinforcement always raises a behavior; punishment always lowers it.
- **Thinking Erikson's stages are pass or fail.** They are crises with better and worse resolutions, and earlier ones can be reworked.
- **Ending Erikson at adolescence.** He named crises for young adulthood, midlife and late life. That is what makes him a lifespan theorist.

Chapter 2 self-test · six items

1. Which part of Freud's mind is the internalized conscience?

A. The id
B. The ego
C. The sensorimotor schema
D. The superego

D. The superego The superego arrives with early childhood as the voice of culture and rule.

2. Erikson's crisis for school age (6 to 12) is

A. industry vs. inferiority
B. initiative vs. guilt
C. identity vs. role confusion
D. autonomy vs. shame and doubt

A. industry vs. inferiority Its virtue is competence.

3. Nagging stops once a teen cleans her room, and she cleans more often. This is

A. negative reinforcement
B. positive punishment
C. negative punishment
D. positive reinforcement

A. negative reinforcement Something unpleasant is removed and the behavior rises.

4. Revising a schema to fit new information is

A. assimilation
B. equilibration
C. accommodation
D. scaffolding

C. accommodation Assimilation fits the world to the schema; accommodation changes the schema.

5. Links between a child's home and school belong to the

A. microsystem
B. mesosystem
C. exosystem
D. chronosystem

B. mesosystem The mesosystem is the set of connections between microsystems.

6. Information-processing theory describes cognitive growth as

A. four qualitative stages in order
B. unconscious conflicts
C. rings of context around a child
D. gradual gains in memory and speed

D. gradual gains in memory and speed It drops stages for continuous improvement in encoding, storage and retrieval.

CHAPTER 3

Genetics and Prenatal Development

Read it in full: **Chapter 3 in the textbook**. Practice it in the lab: **Punnett Square Builder** and **Teratogen Timeline**.

What to know

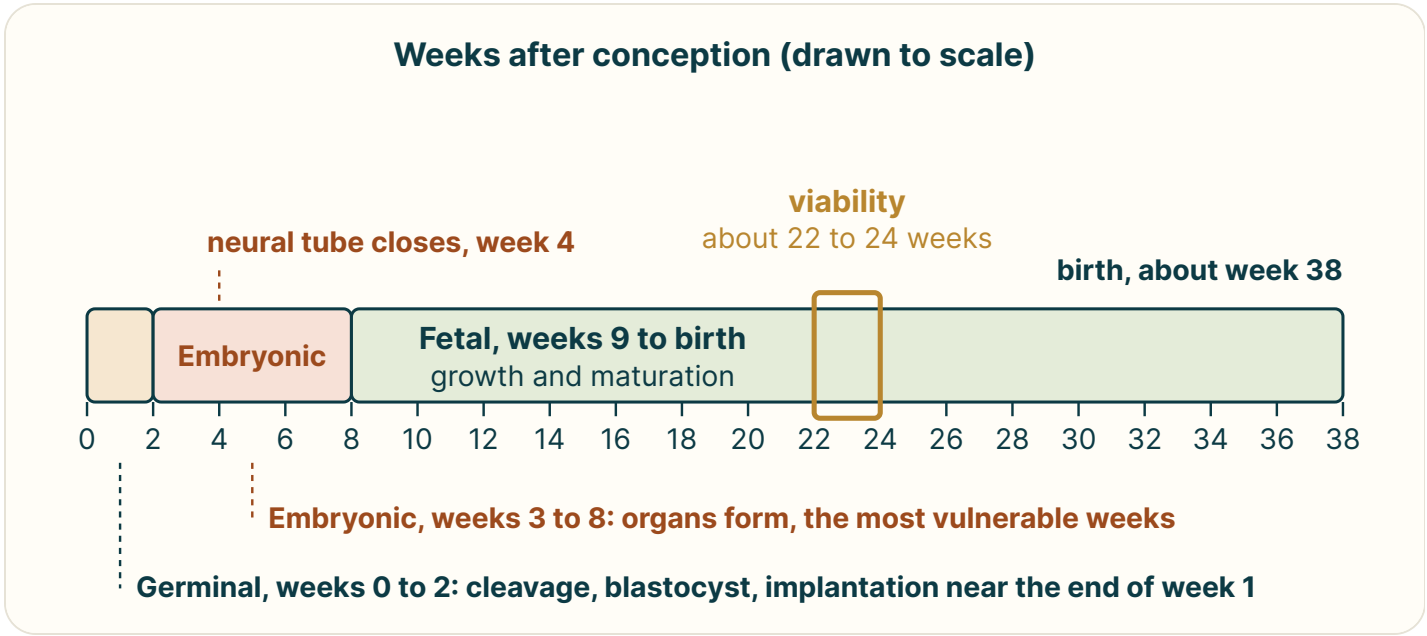
DNA carries the code, a gene is one instruction and chromosomes package DNA: 46 in 23 pairs, 22 pairs of autosomes plus XX or XY. Alleles can be dominant (one copy shows) or recessive (two copies needed), so carriers can pass on hidden traits. Meiosis shuffles each gamete.

Autosomal dominant conditions pass to about half the children of an affected parent; two recessive carriers have about a 25% chance of an affected child each pregnancy; X-linked recessive conditions affect males more often. Nondisjunction produces trisomy 21, more likely with maternal age. The germinal (0 to 2 weeks), embryonic (3 to 8) and fetal (9 to birth) periods follow, with viability about 22 to 24 weeks.

Teratogen harm depends on timing, dose and susceptibility, and the embryonic weeks are most vulnerable. No safe amount of alcohol is known. Prenatal care tracks the mother and fetus; folic acid before conception prevents most neural tube defects; ultrasound, amniocentesis and CVS inform families, with counseling that supports their own choices.

LOCK THESE IN

- DNA, then gene (one instruction), then chromosome (a package). 46 chromosomes, 23 pairs, 22 autosome pairs plus XX or XY.
- Dominant shows with one copy; recessive needs two. A heterozygous carrier can pass on a hidden trait.
- Affected dominant parent: about 50% per child. Two recessive carriers: about 25% per pregnancy.
- X-linked recessive conditions show far more often in males, who have one X.
- Nondisjunction causes trisomy 21; risk rises with maternal age. Turner is 45,X; Klinefelter is 47,XXY.
- Germinal 0 to 2 weeks; embryonic 3 to 8 (organs, most vulnerable); fetal 9 to birth; viability about 22 to 24 weeks.



The prenatal periods drawn to scale. The germinal and embryonic periods fill only the first eight weeks, yet that is when the organs are built and harm does the most damage. The long fetal period is growth and maturation.

Inheritance patterns

Pattern	How it passes	Examples
Autosomal dominant	One altered allele is enough; about 50% per child of an affected parent	Huntington's disease
Autosomal recessive	Two altered alleles needed; two carriers, about 25% per pregnancy	Cystic fibrosis, sickle cell disease, PKU, Tay-Sachs
X-linked recessive	Gene on the X; males affected far more often	Hemophilia, red-green color blindness, Duchenne
Trisomy	An extra whole chromosome from nondisjunction	Down syndrome (trisomy 21)
Sex chromosome	A missing or extra X or Y	Turner (45,X), Klinefelter (47,XXY)

Worked case

WORKED CASE 1 · TWO CARRIERS AND A PUNNETT SQUARE

Ana and Luis are both unaffected carriers of the cystic fibrosis allele (each is Ff, where f is the recessive allele). What are the chances for each pregnancy?

STEP 1 · LIST EACH PARENT'S GAMETES

Each parent can pass F or f, with equal odds.

STEP 2 · FILL THE FOUR BOXES

FF, Ff, fF and ff. That is 1 FF, 2 Ff and 1 ff out of 4.

STEP 3 · READ THE PHENOTYPES

Only ff is affected: 1 of 4, or **25%**. Ff is an unaffected carrier: 2 of 4, or 50%. FF: 1 of 4, or 25%, neither affected nor a carrier.

STEP 4 · SAY IT THE RIGHT WAY

The 25% applies to **each** pregnancy. Chance has no memory, so an earlier child does not change the odds for the next. Whether to test or how to plan is the family's choice, with a genetic counselor's help.

TRAPS PEOPLE FALL INTO

- **Treating gene and chromosome as one thing.** A gene is one stretch of DNA; a chromosome carries many genes.
- **Thinking dominant means common.** Dominant only means one copy is enough to show. It says nothing about how common an allele is.
- **Reading 25% as "one in every four children."** It is the chance for each pregnancy. A family could have several affected children, or none.
- **Saying the egg decides sex.** The egg always gives an X. The sperm, X or Y, decides.

Chapter 3 self-test · six items

1. An affected parent has an autosomal dominant condition. Each child's chance of inheriting it is about

A. 25%
B. 50%
C. 75%
D. 100%

B. 50% One altered allele is enough, and each child has a one in two chance of receiving it.

2. Klinefelter syndrome is written as

A. 45,X
B. 47,XX+21
C. 47,XXY
D. 46,XY

C. 47,XXY Klinefelter is an extra X in a male; Turner is 45,X.

3. Identical twins come from

A. one zygote that splits
B. two eggs and two sperm
C. one egg and two sperm
D. two zygotes that fuse

A. one zygote that splits Monozygotic twins share a genome; fraternal twins are no more alike than siblings.

4. Implantation happens near the end of which period?

A. Embryonic
B. Fetal
C. Neonatal
D. Germinal

D. Germinal The blastocyst implants around the end of the first week.

5. Rubella early in pregnancy can cause

A. limb malformations only
B. microcephaly only
C. spina bifida and nothing else
D. deafness, heart defects, cataracts

D. deafness, heart defects, cataracts Rubella immunity before conception matters for this reason.

6. Ultrasound differs from amniocentesis because it

A. diagnoses chromosomes directly
B. images the fetus without sampling
C. carries a small miscarriage risk
D. samples placental tissue

B. images the fetus without sampling Ultrasound uses sound waves and no radiation; amniocentesis samples fluid.

CHAPTER 4

Birth and the Newborn

Read it in full: **Chapter 4 in the textbook**. Practice it in the lab: **Stages Of Labor** and **Apgar Score**.

What to know

Labor is driven by oxytocin through positive feedback. Stage 1, dilation, is longest (often 12 to 14 hours for a first birth) as the cervix effaces and opens to 10 cm, ending in transition. Stage 2, delivery, lasts minutes to about 2 hours. Stage 3, afterbirth, lasts 5 to 30 minutes and must expel the whole placenta.

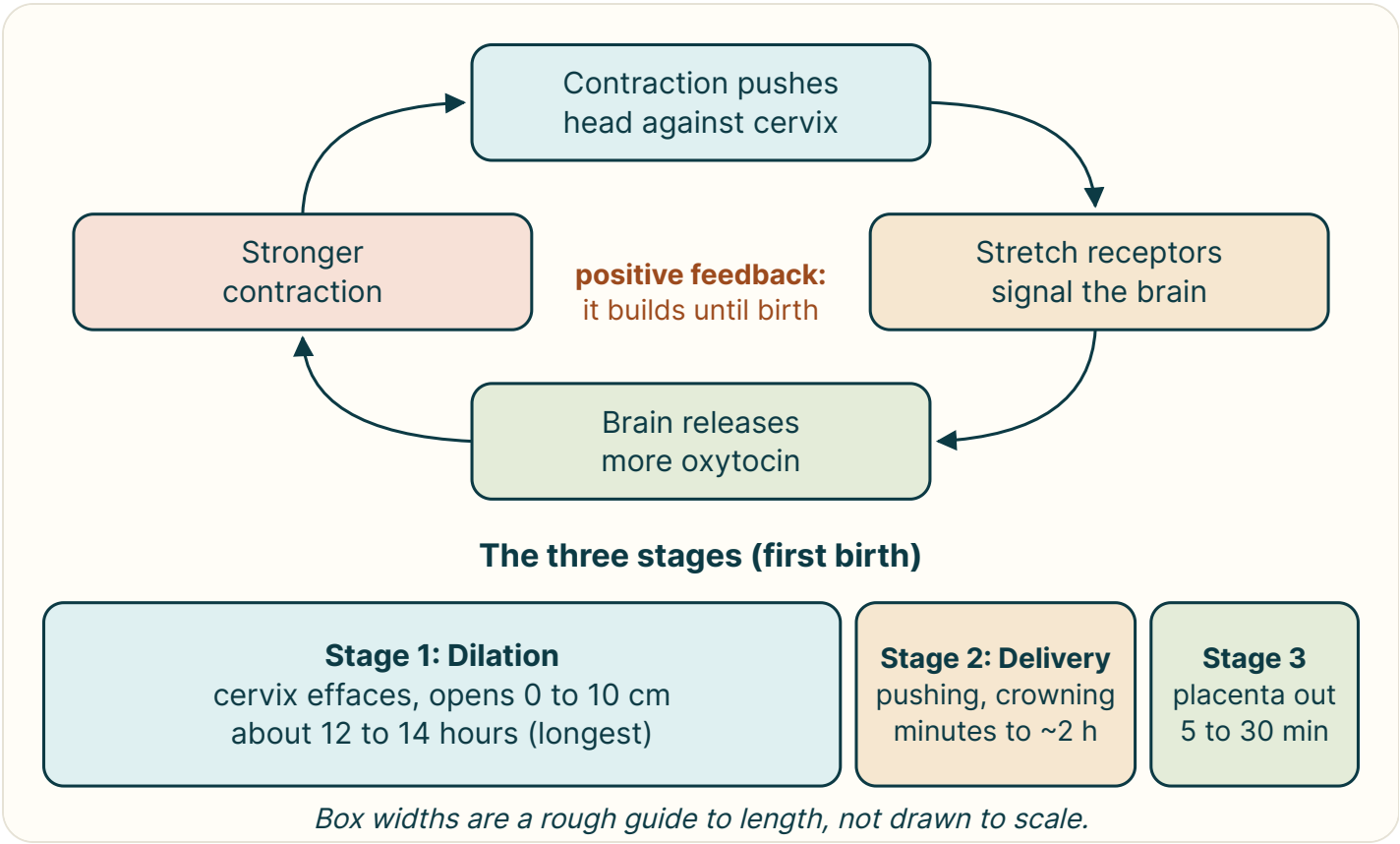
Births happen in hospitals, birth centers or at home; doulas support but do not deliver. Medicated birth often uses an epidural; prepared birth (Lamaze, Bradley) limits drugs. Cesareans can be

lifesaving for breech, fetal distress, failure to progress or placenta previa. Anoxia can injure the brain. Preterm means before 37 weeks; low birth weight means under 2,500 g.

The Apgar score rates appearance, pulse, grimace, activity and respiration from 0 to 2 at 1 and 5 minutes: 7 to 10 reassuring, 4 to 6 needs help, below 4 an emergency. Reflexes should appear and fade on schedule. Newborns already prefer faces, their mother's voice and scent and sweet tastes, with vision the least mature sense.

LOCK THESE IN

- Oxytocin drives labor by positive feedback: contraction, stretch, more oxytocin, stronger contraction.
- Stage 1 dilation (longest, 12 to 14 h first birth, cervix to 10 cm); stage 2 delivery (minutes to about 2 h); stage 3 afterbirth (5 to 30 min).
- A doula supports but does not deliver. Epidural is medicated; Lamaze and Bradley are prepared birth.
- Cesarean indications: breech, fetal distress, failure to progress, placenta previa, certain prior cesareans.
- Preterm: before 37 weeks. LBW: under 2,500 g. VLBW under 1,500 g; ELBW under 1,000 g.
- Apgar at 1 and 5 minutes: five signs, 0 to 2 each. 7 to 10 fine, 4 to 6 needs help, below 4 emergency.



Why labor builds instead of leveling off. Each contraction triggers more oxytocin, which makes the next contraction stronger, until the baby is born. Below, the three stages and their typical lengths for a first birth.

The Apgar score

Sign	Score 0	Score 1	Score 2
Appearance (color)	Blue or pale	Body pink, limbs blue	Fully pink
Pulse (heart rate)	Absent	Below 100 bpm	Above 100 bpm
Grimace (reflex)	No response	Grimace	Cry, cough or pull away
Activity (tone)	Limp	Some flexion	Active movement
Respiration	Absent	Slow, irregular	Strong cry

Worked case

WORKED CASE 1 · SCORING AN APGAR

At one minute, baby Kai has a pink body with blue hands and feet, a heart rate of 120, a grimace when his foot is flicked, some flexion of the limbs and a strong cry. Score him and say what it means.

STEP 1 · APPEARANCE
Body pink, limbs blue: **1**.

STEP 2 · PULSE
120 is above 100 bpm: **2**.

STEP 3 · GRIMACE
A grimace only: **1**.

STEP 4 · ACTIVITY
Some flexion: **1**.

STEP 5 · RESPIRATION
Strong cry: **2**.

STEP 6 · ADD AND READ IT
1 + 2 + 1 + 1 + 2 = **7**. A score of 7 to 10 is reassuring. He will be scored again at 5 minutes.

TRAPS PEOPLE FALL INTO

- **Calling labor negative feedback.** Oxytocin builds on itself. That is positive feedback.
- **Thinking delivery is the longest stage.** Dilation is by far the longest.
- **Ending labor at the baby's birth.** The third stage, the afterbirth, still has to happen.
- **Thinking a doula delivers babies.** A doula supports; a physician or midwife delivers.

Chapter 4 self-test · six items

1. Why can synthetic oxytocin start a stalled labor?

A. It numbs the lower body completely
B. It replaces missing surfactant
C. It drives contractions by positive feedback
D. It relaxes the uterus so the baby can descend

C. It drives contractions by positive feedback More oxytocin means stronger contractions, which trigger more oxytocin.

2. The thinning of the cervix during stage 1 is called

A. effacement
B. dilation
C. crowning
D. transition

A. effacement Effacement thins; dilation opens.

3. Which approach is a partner-coached, drug-free birth method?

A. Epidural
B. Induction
C. Cesarean
D. Bradley

D. Bradley Lamaze and Bradley are prepared-birth methods.

4. A baby born at 33 weeks weighing 1,300 g is

A. preterm and very low birth weight
B. full term and low weight
C. preterm with normal weight
D. small for gestational age only

A. preterm and very low birth weight Under 37 weeks is preterm; under 1,500 g is very low birth weight.

5. An Apgar of 3 at one minute calls for

A. routine care only
B. a repeat score at 1 hour
C. immediate resuscitation
D. a reflex check later

C. immediate resuscitation Below 4 is an emergency.

6. Newborns hear best and already prefer

A. low, flat tones
B. their mother's voice
C. silence
D. unfamiliar languages

B. their mother's voice DeCasper and Fifer showed newborns work to hear their mother's voice.

CHAPTER 5

Infancy: Body and Mind

Read it in full: **Chapter 5 in the textbook**. Practice it in the lab: **Motor Milestones** and **Object Permanence**.

What to know

Infants grow faster than at any later age: weight doubles by about 5 months and triples by 12, following cephalocaudal and proximodistal directions. The brain goes from about 25% to about 75% of adult weight by two through synaptogenesis, experience-guided pruning and myelination, with sensitive periods for key input.

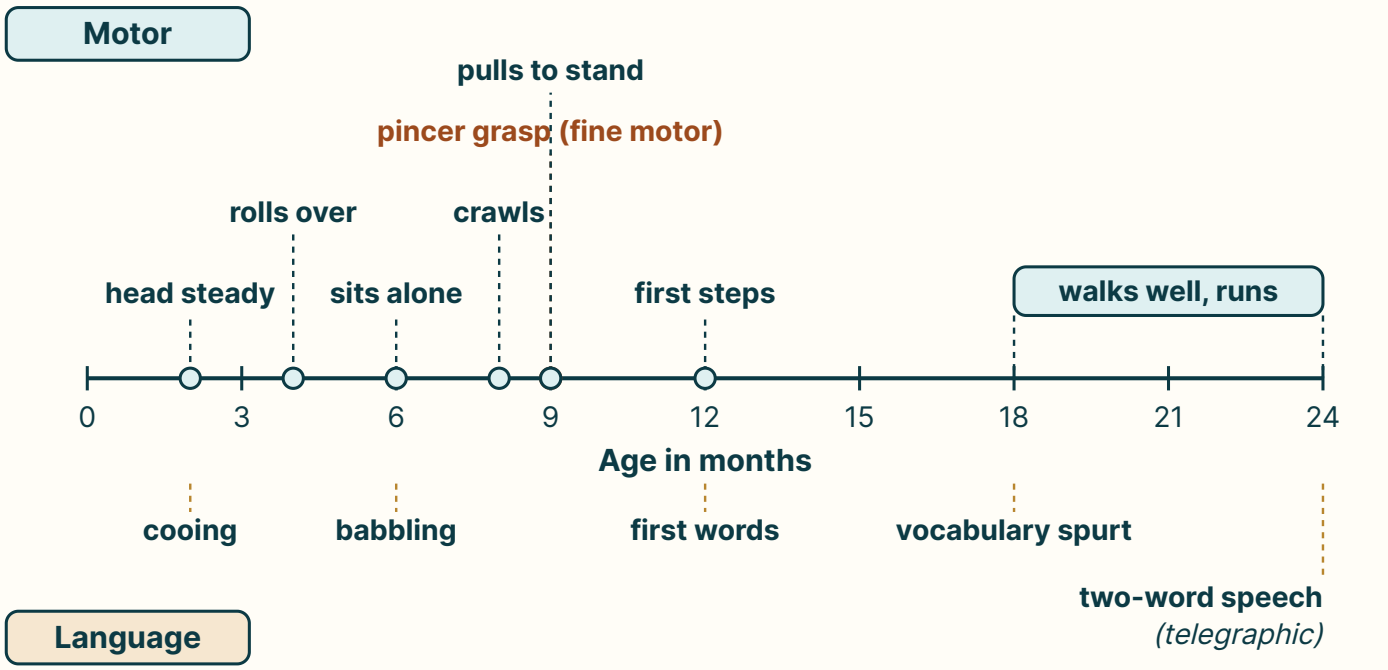
Reflexes give way to voluntary skills in a reliable order: head steady (2 months), roll (4), sit (6), crawl (8), stand (9), walk (about 12), pincer grasp (about 9), though timing varies widely and

dynamic systems theory stresses many interacting factors. Vision is the least mature sense, while hearing, smell and taste are ready; the visual cliff shows depth perception in crawlers.

Piaget's sensorimotor stage runs through six substages to mental representation at 18 to 24 months; object permanence emerges gradually, with the A-not-B error showing it is incomplete and Baillargeon finding earlier signs. Language moves from cooing (2 months) and babbling (6) to first words (12), a vocabulary spurt (18) and telegraphic speech (24), shaped by perceptual narrowing and child-directed speech.

LOCK THESE IN

- Weight doubles by about 5 months, triples by 12, about four times by 24. Brain: about 25% of adult weight at birth, about 75% by 2.
- Cephalocaudal is head to foot; proximodistal is center outward.
- Synaptogenesis overbuilds; pruning removes unused links; myelination speeds signals.
- Motor order: head 2, roll 4, sit 6, crawl 8, stand 9, walk about 12 months. Pincer grasp about 9. Order reliable, timing varies.
- Vision least mature (about 20/400). Hearing, smell, taste ready. Visual cliff: depth wariness after crawling.
- Six sensorimotor substages end in mental representation (18 to 24 months).



The first two years on one scale. Motor skills climb from head control to running, and language climbs from cooing to two-word speech. The order holds for nearly every baby, while the ages are only averages.

Growth and milestones

Age	Body and motor	Language
Birth	About 7.5 lb (3.4 kg), 20 in; brain about 25%	Crying; prefers mother's voice
2 months	Head steady; hands open	Cooing
4 to 6 months	Rolls (4); sits alone (6); reaches, rakes	Babbling begins about 6
8 to 9 months	Crawls; pulls to stand; pincer grasp	Understands some words; points, waves
12 months	Weight tripled; first steps	First words, holophrases
18 months	Walks well	Vocabulary spurt
24 months	About 4 times birth weight; brain about 75%	Two-word telegraphic speech

Worked case

WORKED CASE 1 · NAMING THE SUBSTAGE

Ten-month-old Omar pushes a pillow aside to grab a ball he saw rolled behind it. At 15 months he drops his spoon from the high chair, then from higher and lower, watching each fall. Name each substage.

STEP 1 · THE PILLOW

Moving one thing to get another is intentional, goal-directed action. That is substage 4, **coordination of secondary schemes** (8 to 12 months), when object permanence first shows clearly.

STEP 2 · THE SPOON

Varying an action to see what happens is an experiment. That is substage 5, **tertiary circular reactions** (12 to 18 months).

STEP 3 · WHAT COMES NEXT

By 18 to 24 months he should reach **mental representation**: pretend play and deferred imitation.

TRAPS PEOPLE FALL INTO

- **Thinking newborns lack most neurons.** They have most of them. Connections, pruning and myelin are what change.
- **Calling pruning brain damage.** Removing unused links makes the brain efficient and tuned to its world.
- **Treating milestone ages as deadlines.** The sequence is reliable; the timing has wide normal ranges.
- **Swapping cephalocaudal and proximodistal.** Cephalo is head (head to foot). Proximo is near the center (center outward).

Chapter 5 self-test · six items

1. Myelination mainly

A. speeds signals along axons
B. adds new neurons to the cortex
C. removes unused synapses
D. creates new synapses

A. speeds signals along axons The fatty sheath speeds transmission; pruning removes links.

2. A baby picks up a single pea with thumb and forefinger. This is the

A. palmar grasp reflex
B. pincer grasp
C. Moro reflex
D. raking grasp

B. pincer grasp The pincer grasp emerges around 9 months.

3. Wariness on the visual cliff tends to appear

A. at birth
B. only after walking well
C. after babies begin to crawl
D. before any movement begins

C. after babies begin to crawl Self-produced movement is linked to wariness of heights.

4. A baby shakes a rattle again and again to hear the sound. Which substage is this?

A. Reflexes
B. Primary circular reactions
C. Mental representation
D. Secondary circular reactions

D. Secondary circular reactions Secondary reactions repeat actions that affect objects (4 to 8 months).

5. A one-year-old says "milk!" to mean "I want milk." This is a

A. telegraphic sentence
B. babble
C. holophrase
D. overregularization

C. holophrase A single word carries a whole thought.

6. Skinner explained language mainly through

A. an inborn grammar device
B. social scaffolding alone
C. perceptual narrowing in the first year
D. imitation and reinforcement

D. imitation and reinforcement That is the learning view; Chomsky was the nativist.

CHAPTER 6

Infancy: Social and Emotional

Read it in full: **Chapter 6 in the textbook**. Practice it in the lab: **Temperament Fit** and **Strange Situation**.

What to know

Temperament is the early, biological style of responding. Thomas and Chess found easy (about 40%), difficult (about 10%) and slow-to-warm-up (about 15%) babies plus a blended group, and Kagan studied behavioral inhibition. Goodness of fit, the match between temperament and environment, predicts outcomes better than temperament alone.

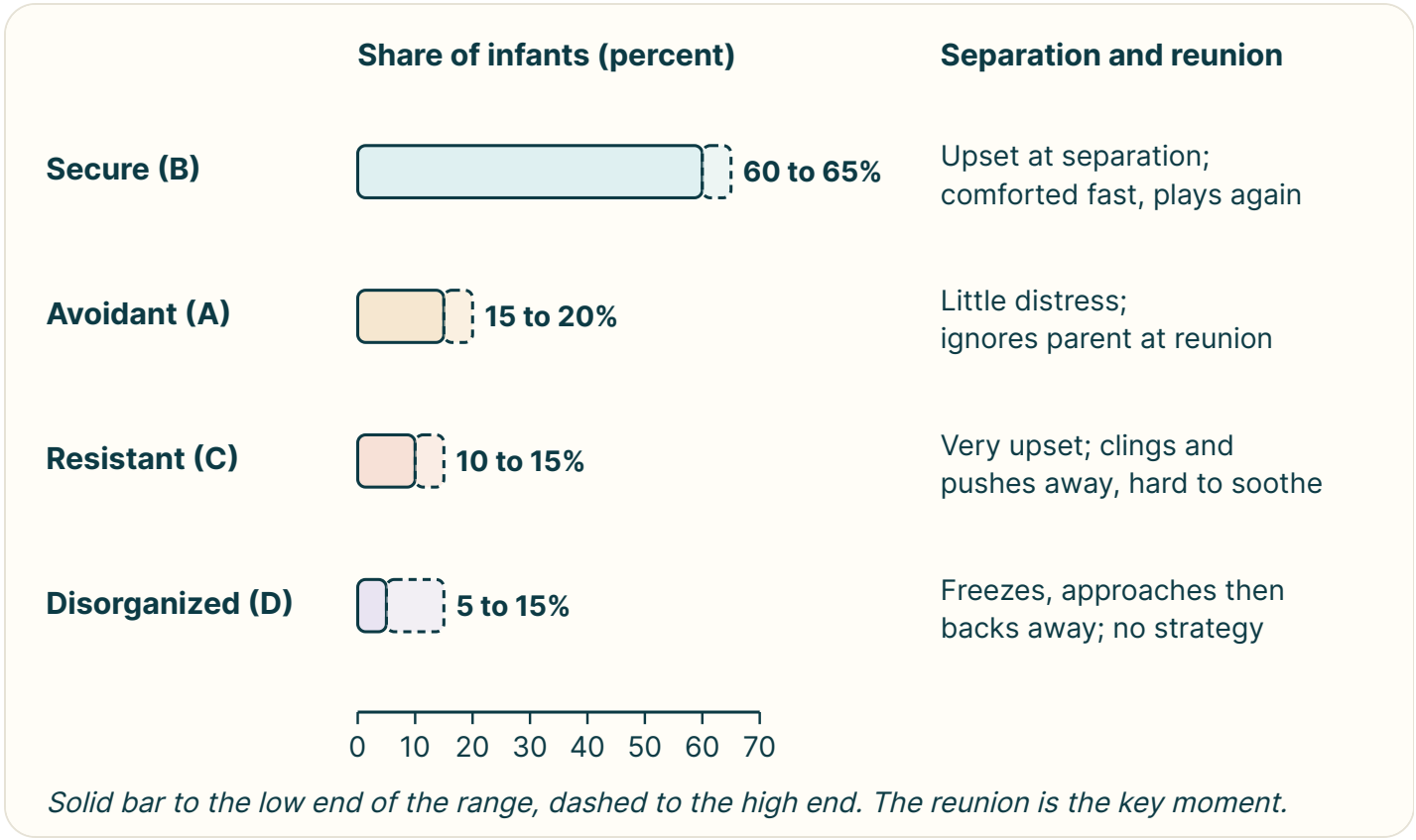
Bowlby saw attachment as an evolved system for staying near protection, with a secure base and internal working model; Harlow showed contact comfort matters more than food. Ainsworth's Strange Situation reads the reunion: secure, insecure-avoidant, insecure-resistant and, added by

Main and Solomon, disorganized. Caregiver sensitivity best predicts security, and answering cries does not spoil a baby.

Erikson's first stages are trust vs. mistrust (hope) and autonomy vs. shame and doubt (will). Emotions arrive on a timetable: social smile at 6 to 8 weeks, stranger and separation anxiety at 6 to 9 months, social referencing at 8 to 10 months, self-conscious emotions after a sense of self. Serve-and-return interaction drives development; childcare quality predicts thinking and language; one stable, responsive relationship builds resilience.

LOCK THESE IN

- Temperament is biological and early; personality is built on top of it.
- Easy about 40%, difficult about 10%, slow-to-warm-up about 15%, the rest a blend.
- Goodness of fit predicts outcomes better than temperament alone.
- Bowlby: secure base, internal working model, proximity and security. Harlow: contact comfort over food.
- Strange Situation: the reunion matters most. Secure, avoidant, resistant, disorganized.
- Caregiver sensitivity is the best predictor of secure attachment. Answering cries does not spoil a baby.



The four attachment patterns. Bars show the approximate share of infants in Western samples. How a baby acts when the caregiver returns is the key to the pattern.

Attachment patterns

Pattern	In the Strange Situation	Typical care history
Secure (B)	Upset at separation; comforted fast; resumes play	Sensitive, consistent, responsive
Avoidant (A)	Little distress; avoids parent at reunion	Consistently unresponsive or rejecting
Resistant (C)	Very upset; clings and pushes away	Inconsistent: sometimes there, sometimes not
Disorganized (D)	Freezing, approach then retreat; no strategy	Frightening, frightened or neglectful care

Worked case

WORKED CASE 1 · CLASSIFYING A REUNION

In the Strange Situation, one-year-old Ezra cries hard when his mother leaves. When she returns he reaches to be picked up, then arches and pushes away, and takes a long time to calm. Classify him.

STEP 1 · SEPARATION

Very distressed. That rules out avoidant.

STEP 2 · REUNION

He seeks contact and resists it at once, and is hard to soothe. A secure baby settles quickly.

STEP 3 · IS THERE A STRATEGY?

Yes, an organized if anxious one, so it is not disorganized.

ANSWER

Insecure-resistant (ambivalent), often linked to inconsistent care.

TRAPS PEOPLE FALL INTO

- **Treating temperament as personality.** Temperament is the early raw material; personality is built over years.
- **Thinking a difficult baby is doomed.** Risk rises mainly when intensity meets harsh or chaotic care.
- **Watching the separation, not the reunion.** In the Strange Situation, reunion behavior classifies the pattern.
- **Calling an avoidant baby well adjusted.** Calm at separation plus ignoring the parent at reunion is insecure.

Chapter 6 self-test · six items

1. Which temperament profile was the most common?

A. Easy
B. Difficult
C. Slow-to-warm-up
D. Inhibited

A. Easy About 40% were easy.

2. Bowlby's secure base means

A. the infant's inborn temperament
B. a trusted adult a child explores from
C. a laboratory waiting room for parents
D. the first stage of grief

B. a trusted adult a child explores from The toddler ventures out and returns for reassurance.

3. Which caregiving history is linked to insecure-resistant attachment?

A. Consistently sensitive care
B. Consistently rejecting care
C. Frightening care
D. Inconsistent care

D. Inconsistent care Sometimes responsive and sometimes unavailable care is linked to resistant attachment.

4. A toddler insists "me do it" with a zipper. Erikson's stage is

A. trust vs. mistrust
B. autonomy vs. shame and doubt
C. initiative vs. guilt
D. industry vs. inferiority

B. autonomy vs. shame and doubt The will is forming; safe attempts build autonomy.

5. Embarrassment and empathy usually appear around

A. 18 months
B. 6 weeks
C. 4 months
D. 5 to 6 years

A. 18 months They need a sense of self, about when mirror self-recognition appears.

6. In the still-face experiment, babies whose parent goes blank

A. show no change at all
B. play more happily on their own
C. grow upset, then withdraw
D. fall asleep quickly

C. grow upset, then withdraw Infants depend on responsive interaction and protest its absence.

CHAPTER 7

Early Childhood

Read it in full: **Chapter 7 in the textbook**. Practice it in the lab: **Preoperational Limits** and **Parenting Styles**.

What to know

Preschool growth slows to 2 to 3 inches and 4 to 5 pounds a year as the body leans out. The brain reaches about 90% of adult weight by 5 or 6 through myelination, pruning and lateralization, and gross motor skills mature ahead of fine motor skills.

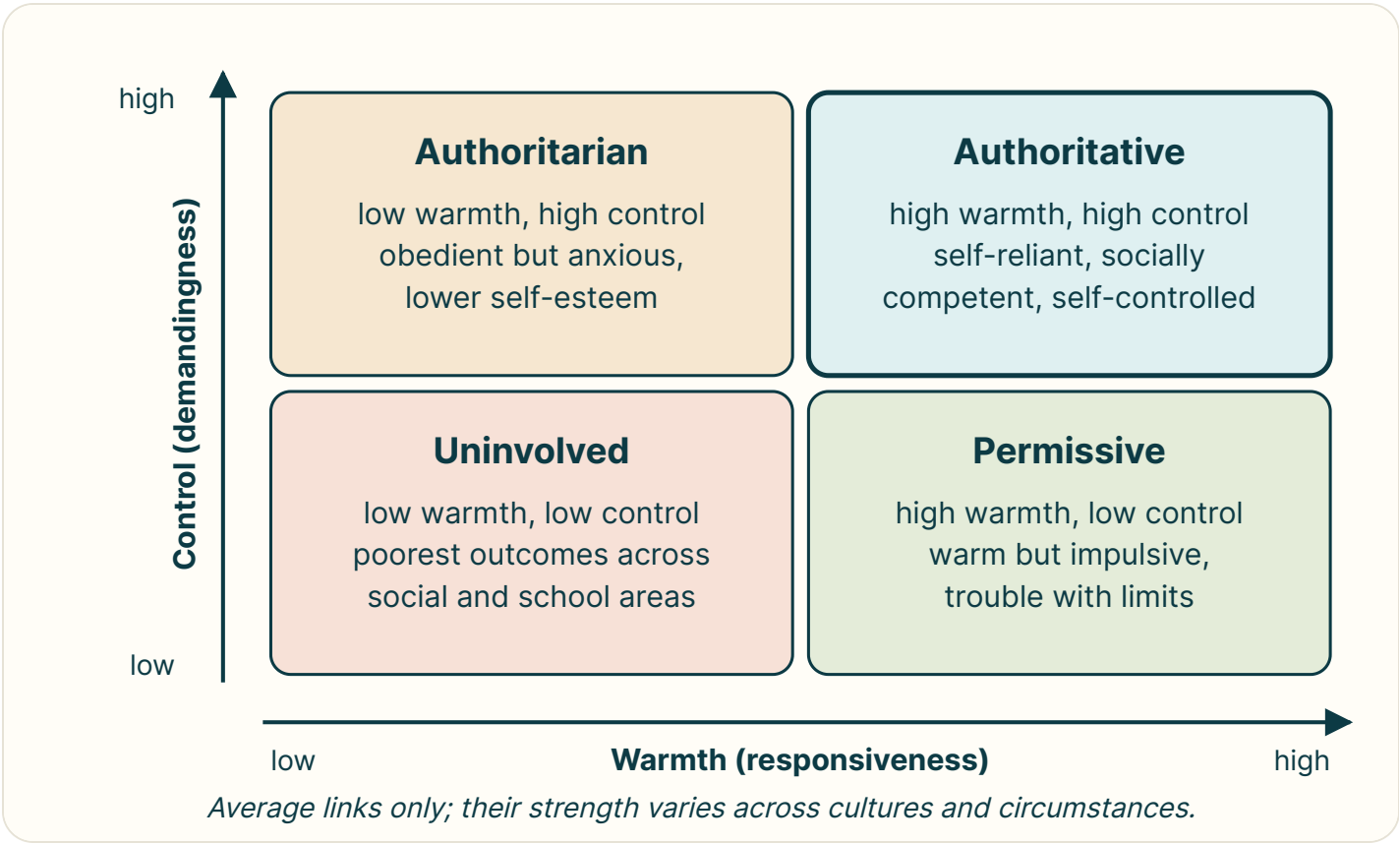
Piaget's preoperational stage (2 to 7) brings the symbolic function but is limited by egocentrism, centration, irreversibility and animism, so children fail conservation. Simpler tasks show Piaget underestimated them, and theory of mind appears around 4. Vygotsky's ZPD, scaffolding and

private speech explain how help pulls learning forward. Vocabulary reaches about 10,000 words understood by 6 through fast mapping, and overregularization shows rule learning.

The early self-concept is concrete and rosy, self-conscious emotions and regulation grow, and Erikson's stage is initiative vs. guilt (purpose). Play grows more social (Parten) and sociodramatic; gender identity comes by 2 to 3 and constancy by 6 to 7. Baumrind's authoritative style, high warmth with high reasoned control, predicts the best average outcomes, with cultural variation.

LOCK THESE IN

- Growth 2 to 3 in and 4 to 5 lb a year; brain about 90% of adult weight by 5 to 6; handedness settled by about 5.
- Gross motor matures before fine motor.
- Preoperational (2 to 7): symbolic function, but egocentrism, centration, irreversibility, animism; fails conservation.
- Theory of mind and passing the false-belief test emerge around age 4.
- Vygotsky: ZPD, scaffolding, more knowledgeable other, private speech (not aimless).
- About 10,000 words understood by 6; fast mapping; overregularization shows rule learning.



Baumrind's four parenting styles. Warmth runs left to right and control runs bottom to top. Authoritative parenting pairs high warmth with firm, explained limits.

Key terms and comparisons

Term	What it means	Example
Symbolic function	One thing stands for another	A banana becomes a phone
Egocentrism	Hard to take another's view	Three-mountains task
Centration	Fixes on one feature	Judges juice by height alone
Irreversibility	Cannot mentally undo a change	"It's more now" after pouring
Animism	Life and feelings in objects	"The cloud is chasing us"
Theory of mind	Others have beliefs, even false ones	Passes the false-belief test at about 4
Fast mapping	Rough meaning after one or two exposures	Learns "koala" from one book
Overregularization	A rule applied too widely	"I goed," "two foots"
Private speech	Self-talk that guides thinking	"Now the red piece goes here"
Gender constancy	Gender stays the same despite looks	About age 6 to 7

Worked case

WORKED CASE 1 · DIAGNOSING A CONSERVATION ERROR

Four-year-old Mateo watches two equal rows of six coins. One row is spread out, and he says it now has more. Explain his error in Piaget's terms.

STEP 1 · NAME THE TASK

This is conservation of number.

STEP 2 · FIND THE CENTRATION

He fixes on the length of the row and ignores how many coins are in it.

STEP 3 · FIND THE IRREVERSIBILITY

He cannot mentally push the coins back together to see nothing was added.

STEP 4 · PLACE THE STAGE

He is **preoperational**. Number conservation usually arrives around 6 to 7, in concrete operations.

TRAPS PEOPLE FALL INTO

- **Thinking the preschool brain grows by adding neurons.** Growth comes from myelination, pruning and better wiring.
- **Calling conservation errors stubbornness.** They are the honest output of centration and irreversibility.
- **Assuming Piaget had the ages exactly right.** Simpler tasks show preschoolers can take others' views earlier.
- **Treating private speech as a problem.** Vygotsky saw it as a self-guiding tool that becomes inner speech.

Chapter 7 self-test · six items

1. Handedness is usually settled by about age

A. 1
B. 3
C. 9
D. 5

D. 5 Lateralization advances and handedness is typically stable by about five.

2. A child believes the moon follows the car. This is

A. conservation
B. animism
C. class inclusion
D. fast mapping

B. animism Attributing life and intention to objects is animism.

3. In the false-belief test, most children answer correctly by about

A. age 4
B. age 2
C. age 6
D. age 8

A. age 4 They predict the character will look where she last saw the toy.

4. Learning a new word's rough meaning after one exposure is

A. overregularization
B. private speech
C. fast mapping
D. centration

C. fast mapping Fast mapping drives the vocabulary explosion.

5. Children who share a play theme and roles, like playing restaurant, show

A. parallel play
B. cooperative play
C. solitary play
D. onlooker play

B. cooperative play Cooperative play has shared goals and roles.

6. "Because I said so," with little warmth, describes which style?

A. Authoritarian
B. Authoritative
C. Permissive
D. Uninvolved

A. Authoritarian High control and low warmth is authoritarian.

CHAPTER 8

Middle Childhood

Read it in full: **Chapter 8 in the textbook**. Practice it in the lab: **Concrete Operations** and **Kohlberg Dilemma**.

What to know

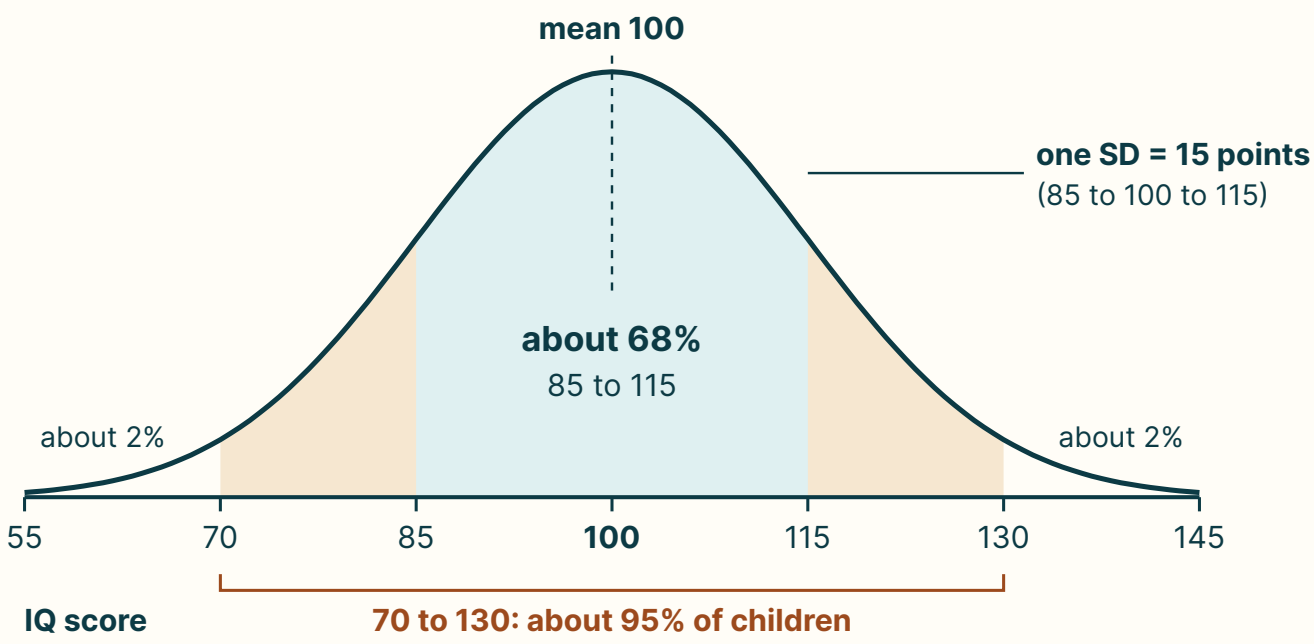
Middle childhood (6 to 11) brings steady growth of 2 to 3 inches and 5 to 7 pounds a year and the healthiest, safest years of life. Obesity, asthma (the most common chronic illness) and unintentional injury (the leading cause of death) are the main, largely preventable threats.

Concrete operations bring reversibility and decentration, so children conserve, task by task (horizontal décalage), and master class inclusion, seriation and transitivity, though abstract reasoning waits. Theories of intelligence range from Spearman's g to Cattell and Horn's fluid and crystallized, Gardner's multiple intelligences and Sternberg's triarchic theory. Deviation IQ has a mean of 100 and SD of 15 and predicts school achievement but not the whole child.

Kohlberg's three levels and six stages track moral reasoning; most school-age children are preconventional, and critics note Gilligan's ethic of care, cultural bias and the reasoning-behavior gap. Erikson's industry vs. inferiority builds competence; self-esteem is domain-specific (Harter); sociometric status matters, with rejected children most at risk; and families move toward coregulation.

LOCK THESE IN

- Growth about 2 to 3 in and 5 to 7 lb a year. Healthiest, safest years of life.
- Obesity is the signature problem; asthma the most common chronic illness; unintentional injury the leading cause of death.
- Concrete operations (7 to 11): reversibility and decentration; conservation, class inclusion, seriation, transitivity.
- Horizontal décalage: number, then liquid, mass, weight, volume.
- Spearman g; Cattell and Horn fluid vs. crystallized; Gardner eight intelligences; Sternberg analytical, creative, practical.
- Deviation IQ: mean 100, SD 15; about two-thirds score 85 to 115.



Deviation IQ drawn to scale. With a mean of 100 and a standard deviation of 15, about 68% of children score between 85 and 115 and about 95% between 70 and 130.

Conservation tasks

Task	What is transformed	Typically mastered
Number	A row of tokens spread out	About 6 to 7 years
Liquid	Water poured into a taller glass	About 7 years
Mass	Clay ball rolled into a sausage	About 7 to 8 years
Weight	Same clay judged for heaviness	About 9 to 10 years
Volume	Water displaced by the clay	About 11 to 12 years

Worked case

WORKED CASE 1 · RATIO IQ AND DEVIATION IQ

Using the old ratio formula, find the IQ of an 8-year-old with a mental age of 10. Then explain where a modern deviation IQ of 115 sits.

STEP 1 · RATIO FORMULA

IQ = (mental age ÷ chronological age) × 100.

STEP 2 · PLUG IN

(10 ÷ 8) × 100 = 1.25 × 100 = **125**.

STEP 3 · DEVIATION IQ

115 is one standard deviation (15 points) above the mean of 100.

STEP 4 · READ THE CURVE

About 68% of children score 85 to 115, so about 16% score above 115. A score of 115 is at about the 84th percentile.

CHECK IT

Modern tests no longer use the ratio; they place the child against age-mates on the curve.

TRAPS PEOPLE FALL INTO

- **Thinking middle childhood is risky for health.** It is the healthiest period; the main threats are preventable.
- **Calling disease the leading cause of death at this age.** Unintentional injury leads.
- **Expecting all conservations at once.** They arrive task by task: horizontal décalage.

- **Crediting school-age children with abstract logic.** Concrete operations need things a child can picture; "what if" waits for adolescence.

Chapter 8 self-test · six items

1. If A is longer than B and B is longer than C, then A is longer than C. This is

A. seriation
B. class inclusion
C. reversibility
D. transitivity

D. transitivity Transitivity infers a relation through a third item.

2. Gardner's theory claims intelligence is

A. a single general factor called g
B. only speed of processing
C. several relatively independent abilities
D. fixed at birth and unchanging

C. several relatively independent abilities He proposed eight intelligences.

3. Which IQ score is two standard deviations above the mean?

A. 115
B. 145
C. 120
D. 130

D. 130 With mean 100 and SD 15, two SDs above is 130.

4. Kohlberg's stage 4 is driven by

A. upholding law and order
B. avoiding punishment
C. winning approval from others
D. universal ethical principles

A. upholding law and order Stage 4 is conventional: rules and the social system.

5. A child is neither liked nor disliked and goes unnoticed. Her status is

A. rejected
B. controversial
C. neglected
D. popular

C. neglected Neglected children often adjust fine over time.

6. Harter found that school-age self-esteem is

A. one global number from birth
B. judged domain by domain
C. unrelated to comparison
D. fixed by temperament

B. judged domain by domain Academic, athletic, social, appearance and conduct are judged separately first.

CHAPTER 9

Adolescence: Body and Mind

Read it in full: **Chapter 9 in the textbook**. Practice it in the lab: **Puberty Sequence** and **Pendulum Problem**.

What to know

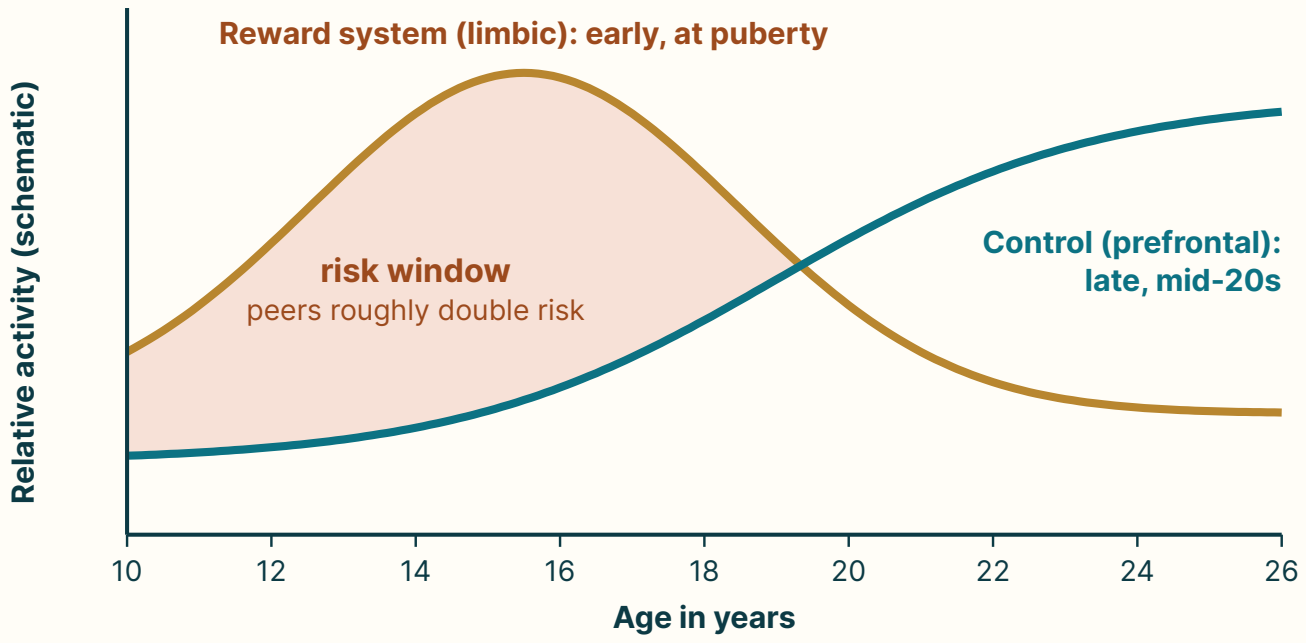
Puberty starts in the brain: the hypothalamus releases GnRH, the pituitary releases LH and FSH, and the gonads raise estrogen and testosterone (the HPG axis). Primary characteristics involve reproductive organs (menarche, spermarche); secondary ones are outward signs. Girls start about a year earlier, onset has moved earlier (the secular trend), and early-maturing girls face the most risk.

The dual-systems model pairs an early-maturing reward system with a prefrontal control system that matures into the mid-twenties; peers watching roughly double risk-taking. Needs for calcium and iron rise, a circadian phase delay leaves teens short of the 8 to 10 hours they need, and the leading causes of death are injury-related and preventable.

Formal operations (11 and up) bring abstract, hypothetical and hypothetico-deductive reasoning, shown in the pendulum problem, though they are not universal. Elkind's adolescent egocentrism brings the imaginary audience (feeling watched) and the personal fable (feeling unique and invulnerable).

LOCK THESE IN

- HPG axis: hypothalamus (GnRH), pituitary (LH, FSH), gonads (estrogen, testosterone). Adrenarche comes first, about 6 to 8.
- Primary: reproductive organs, menarche, spermarche. Secondary: breasts, hair, voice. Tanner stages 1 to 5.
- Girls start about a year before boys. Secular trend: earlier puberty over the past century.
- Early-maturing girls carry the most emotional and social risk.
- Dual systems: reward system early, prefrontal control late (mid-20s). Peers roughly double risk-taking.
- Calcium and vitamin D for peak bone mass; iron needs rise. Sleep need 8 to 10 hours; circadian phase delay.



Two brain systems on two clocks (schematic). The reward system surges around puberty while prefrontal control matures into the mid-twenties. The shaded gap is the risk window, made wider when peers are watching.

Two brain systems

System	Key regions	Matures	Drives
Socioemotional	Amygdala, nucleus accumbens (limbic)	Early, at puberty	Reward-seeking, emotion, peer sensitivity
Cognitive control	Prefrontal cortex	Late, into the mid-20s	Planning, impulse control, weighing consequences

Worked case

WORKED CASE 1 · SOLVING THE PENDULUM LIKE A FORMAL THINKER

Lucia must find what controls how fast a pendulum swings: string length, weight, drop height or push. Lay out a formal-operational approach.

STEP 1 · LIST THE HYPOTHESES

Any of the four factors, alone or together, might matter.

STEP 2 · TEST ONE AT A TIME

Change only string length and keep weight, height and push the same. Then change only weight, and so on.

STEP 3 · READ THE RESULTS

Only changing string length changes the speed of the swing.

STEP 4 · CONTRAST THE CONCRETE THINKER

A concrete thinker changes several things at once and draws muddled conclusions. Systematic control of variables is **hypothetico-deductive reasoning**.

TRAPS PEOPLE FALL INTO

- **Thinking puberty starts in the gonads.** It starts in the brain, with GnRH from the hypothalamus.
- **Calling breast development primary.** It is secondary. Primary means the reproductive organs themselves.
- **Thinking early maturing is always an advantage.** Early-maturing girls face the most emotional and social risk.
- **Saying teens don't know risks.** They often rate risks like adults do; the reward system and peers tip the balance.

Chapter 9 self-test · six items

1. LH and FSH are released by the

A. hypothalamus
B. adrenal glands
C. gonads
D. pituitary

D. pituitary The pituitary answers GnRH with LH and FSH.

2. Voice deepening in boys is a

A. primary sex characteristic
B. secondary sex characteristic
C. sign of adrenarche only
D. Tanner stage 1 sign

B. secondary sex characteristic Secondary characteristics are outward signs not needed for reproduction.

3. Which part of the brain drives reward-seeking in the dual-systems model?

A. Limbic structures
B. Prefrontal cortex
C. Occipital lobe
D. Cerebellum

A. Limbic structures The amygdala and nucleus accumbens are part of the early-maturing system.

4. Calm reasoning on a written quiz is an example of

A. hot cognition
B. the personal fable
C. cold cognition
D. risk window thinking

C. cold cognition Hot cognition is decision-making under emotion and social arousal.

5. "What if snow were black?" A teen can reason inside this premise because of

A. concrete operations
B. formal operations
C. object permanence
D. conservation

B. formal operations Formal thought handles the hypothetical.

6. "No one has ever felt what I feel." This is

A. the imaginary audience
B. foreclosure
C. the personal fable
D. social referencing

C. the personal fable The belief that one's experience is unique.

CHAPTER 10

Adolescence: Identity and Relationships

Read it in full: **Chapter 10 in the textbook**. Practice it in the lab: **Identity Statuses** and **Risk And Resilience**.

What to know

Erikson's adolescent stage is identity vs. role confusion, with a psychosocial moratorium for trying roles. Marcia crossed exploration and commitment into diffusion, foreclosure, moratorium and achievement; achievement usually comes through moratorium, and diffusion is the worrying pattern.

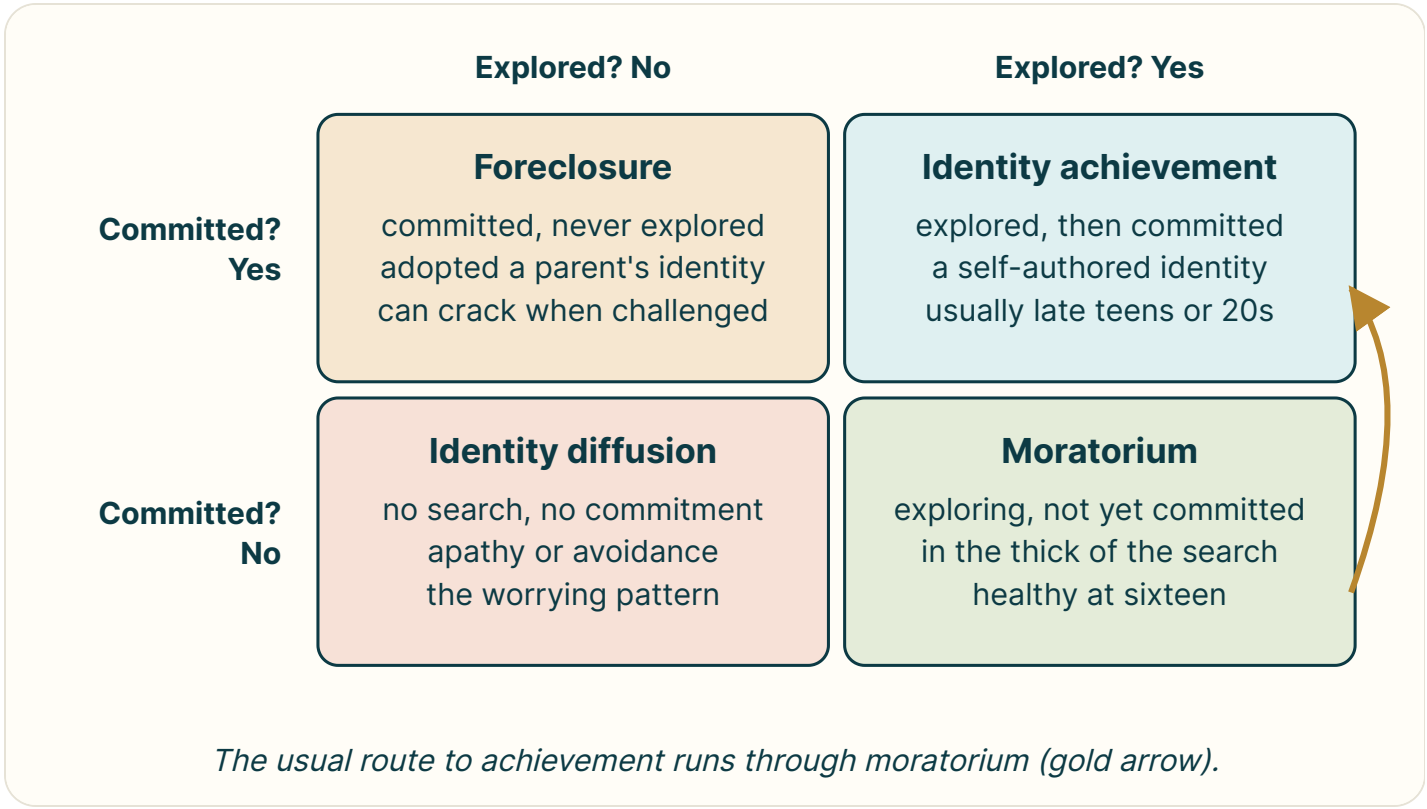
Autonomy grows as emotional, behavioral and finally value autonomy, through individuation within warm connection. Conflict rises over mundane issues, then eases; authoritative parenting

with monitoring predicts the best adjustment. Friendships deepen into intimacy, cliques give closeness and crowds give identity, and conformity peaks around 13 to 15.

Morality moves from heteronomous to autonomous; most adolescents reason at Kohlberg's conventional level, and Gilligan added an ethic of care. Risk peaks in adolescence, magnified by peers, but resilience is ordinary magic built from protective factors across levels, above all one caring adult.

LOCK THESE IN

- Erikson: identity vs. role confusion; the psychosocial moratorium is a sanctioned time to try roles.
- Marcia: exploration crossed with commitment. Diffusion (neither), foreclosure (commit only), moratorium (explore only), achievement (both).
- Achievement usually comes through moratorium, often in the late teens or twenties. Diffusion is the worrying pattern.
- Autonomy: emotional, behavioral, value (latest). Individuation within connection, not detachment.
- Conflict rises over mundane issues and eases. Authoritative parenting plus monitoring predicts the best adjustment.
- Clique: small, real friends, intimacy. Crowd: large, reputation, identity. Conformity peaks about 13 to 15.



Marcia's four identity statuses. Crossing exploration with commitment gives four places a young person can stand. The usual road to achievement passes through moratorium.

Marcia's statuses

Status	Explored?	Committed?	What it looks like
Identity diffusion	No	No	Apathetic or avoidant about the self
Foreclosure	No	Yes	Adopted a parent's or authority's identity
Moratorium	Yes, ongoing	Not yet	Actively searching and questioning
Identity achievement	Yes	Yes	Personal commitments after exploring

Worked case

WORKED CASE 1 · PLACING A TEEN IN MARCIA'S GRID

Three seniors talk about careers. Ava: "I'm going to be a dentist like my mom; I never thought about anything else." Ben: "I've shadowed a nurse, a teacher and an engineer, and I still don't know." Cara: "I tried a few fields and chose social work because it fits my values." Classify each.

STEP 1 · ASK TWO QUESTIONS FOR EACH

Did she or he explore? Is there a commitment?

STEP 2 · AVA

Committed, no exploration: **foreclosure**.

STEP 3 · BEN

Exploring, not committed: **moratorium**, which is healthy at this age.

STEP 4 · CARA

Explored, then committed: **identity achievement** in this domain.

CHECK IT

Statuses are domain-specific. Ava may be in a different status about religion or politics.

TRAPS PEOPLE FALL INTO

- **Reading moratorium as failure.** Active searching is healthy; diffusion, where no search starts, is the concern.
- **Calling foreclosure maturity.** The commitment was never tested and can crack under challenge.
- **Equating autonomy with detachment.** Healthy individuation happens inside a warm relationship.
- **Reading rising conflict as a broken family.** Arguments are mostly mundane and ease later; warmth and monitoring matter more.

Chapter 10 self-test · six items

1. Erikson's sanctioned time-out for trying on roles is the

A. identity achievement

B. foreclosure

C. chumship

D. psychosocial moratorium

D. psychosocial moratorium Society allows experimentation before adult commitments.

2. A teen exploring many majors with no commitment yet is in

A. moratorium
B. foreclosure
C. diffusion
D. achievement

A. moratorium Active searching without commitment is moratorium.

3. Monitoring works best when it comes from

A. open sharing within a warm relationship
B. constant surveillance of the phone
C. strict rules without reasons
D. peers reporting to parents

A. open sharing within a warm relationship Disclosure within warmth is what makes monitoring effective.

4. A well-liked, kind, cooperative teen has high

A. perceived popularity
B. crowd status only
C. conformity
D. sociometric popularity

D. sociometric popularity Perceived popularity is status and visibility; sociometric is being liked.

5. Judging rules as agreements and weighing intentions is

A. heteronomous morality
B. preconventional reasoning
C. autonomous morality
D. stage 1 obedience

C. autonomous morality Piaget's older children and adolescents move toward autonomous morality.

6. Masten called resilience

A. a rare gift
B. ordinary magic
C. the personal fable
D. a fixed trait

B. ordinary magic It is built from common protective factors.

CHAPTER 11

Early Adulthood

Read it in full: **Chapter 11 in the textbook**. Practice it in the lab: **Postformal Thought** and **Love Triangle**.

What to know

Most physical capacities peak in the twenties or early thirties, but senescence has already begun; untrained aerobic capacity falls about 1% a year after 30, and peak bone mass is reached near 30. Health habits set now are the largest lever on later health, though feeling invincible makes prevention a hard sell.

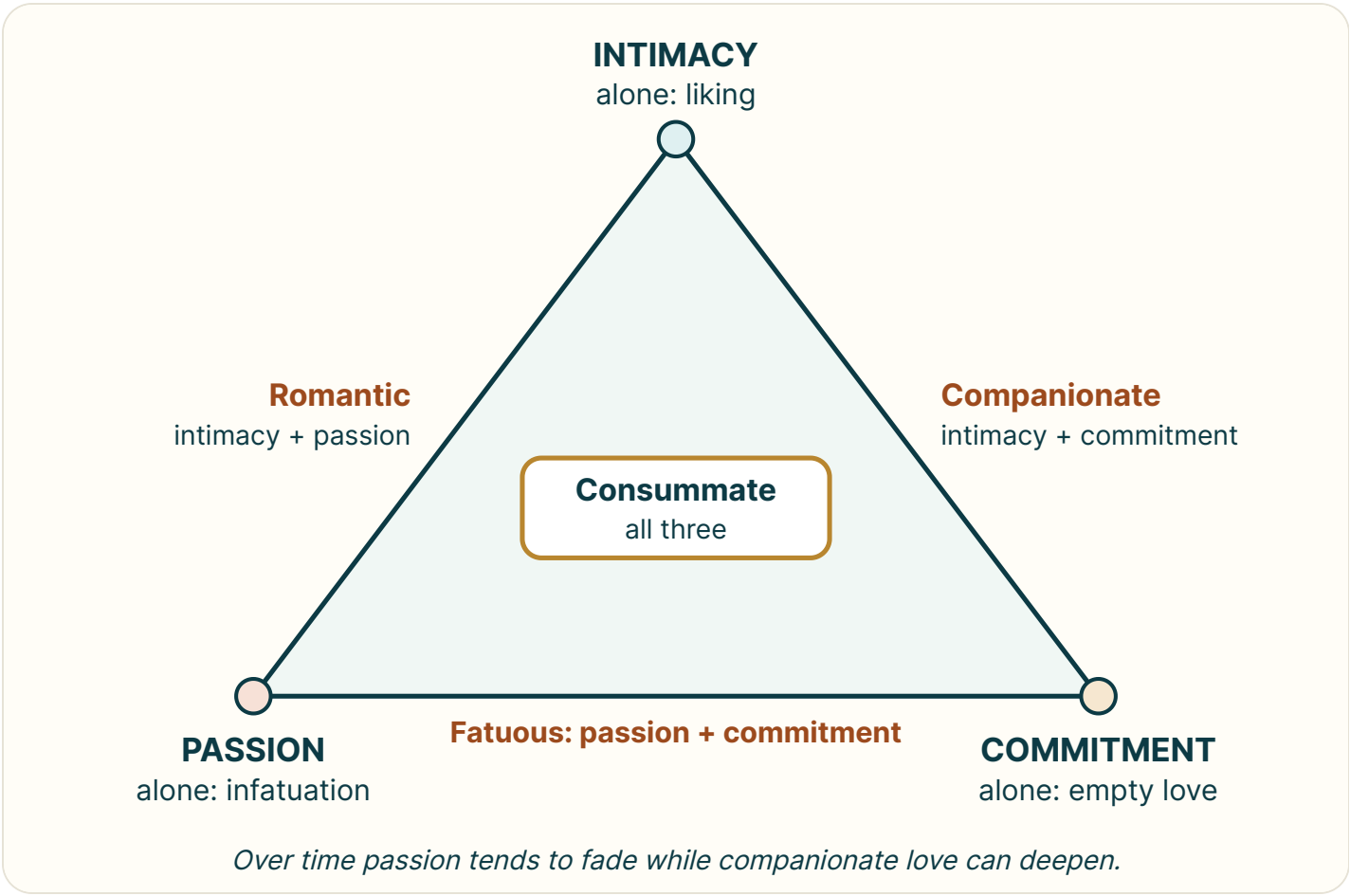
Postformal thought is relativistic, dialectical and pragmatic; Perry traced students from dualism to commitment within relativism. Expertise grows through deliberate practice and stays domain-

specific. Erikson's intimacy vs. isolation yields love and requires a resolved identity; adult attachment styles echo infancy but can change through earned security.

Sternberg's triangle combines intimacy, passion and commitment into seven kinds of love; passion fades while companionate love can deepen. Partnering now features later marriage, cohabitation and assortative mating. Work anchors identity (Holland's RIASEC, Super's establishment stage), and Arnett's emerging adulthood (about 18 to 25) is defined by exploration, instability, self-focus, feeling in-between and possibilities.

LOCK THESE IN

- Most capacities peak in the 20s or early 30s; VO_2 max falls about 1% a year after 30 if untrained.
- Peak bone mass about 30. Health habits set now are the biggest lever on later health.
- Postformal thought: relativistic, dialectical, pragmatic. Perry: dualism, multiplicity, commitment within relativism.
- Expertise comes from deliberate practice and stays domain-specific.
- Erikson: intimacy vs. isolation, virtue love; identity comes first.
- Adult attachment: secure, anxious (preoccupied), avoidant (dismissing). Earned security is possible.



Sternberg's triangle of love. Each corner is one component, each side a pair, and the center holds all three. Passion often cools while intimacy and commitment carry a long partnership.

Sternberg's kinds of love

Kind	Intimacy	Passion	Commitment
Liking	Yes	No	No
Infatuation	No	Yes	No
Empty love	No	No	Yes
Romantic	Yes	Yes	No
Companionate	Yes	No	Yes
Fatuous	No	Yes	Yes
Consummate	Yes	Yes	Yes

Worked case

WORKED CASE 1 · FORMAL OR POSTFORMAL?

Anika, a new manager, must decide whether to let go of an employee whose work has slipped while he cares for a sick parent. Show how postformal thought handles this.

STEP 1 · FORMAL LOGIC ALONE

"Performance is below standard, so he goes." One rule, one answer.

STEP 2 · RELATIVISTIC

She sees the answer depends on context: his history, the team's needs, the cause of the slip.

STEP 3 · DIALECTICAL

She holds both truths, fairness to the team and compassion for him, and looks for an option that honors both.

STEP 4 · PRAGMATIC

She offers a temporary schedule change with clear goals and a review date.

ANSWER

That is postformal thought: logic bent to fit a real, messy problem.

TRAPS PEOPLE FALL INTO

- **Thinking decline starts in midlife.** Senescence begins at the peak; it is just too slow to notice.
- **Treating ten thousand hours as a rule.** Ericsson stressed the quality of deliberate practice, not a magic number.
- **Thinking expertise transfers.** Expertise is domain-specific.
- **Putting intimacy before identity.** Erikson argued identity must come first.

Chapter 11 self-test · six items

1. The best single index of aerobic fitness is

A. VO_2 max
B. peak bone mass
C. reaction time
D. resting heart rate

A. VO_2 max Maximal oxygen uptake peaks in the late teens and twenties.

2. "All opinions are equally valid" is Perry's position of

A. dualism
B. commitment within relativism
C. multiplicity
D. formal operations

C. multiplicity Multiplicity comes between dualism and committed relativism.

3. An avoidant (dismissing) adult tends to

A. crave closeness and fear abandonment
B. value independence and keep distance
C. trust and depend comfortably
D. seek constant reassurance

B. value independence and keep distance Avoidant adults grow uneasy with dependence.

4. Intimacy plus passion without commitment is

A. companionate love
B. fatuous love
C. empty love
D. romantic love

D. romantic love Romantic love lacks lasting commitment.

5. Holland's RIASEC model matches people to work by

A. IQ score
B. vocational personality type
C. adult attachment style
D. birth order

B. vocational personality type Fit between interests and work predicts satisfaction.

6. Which is one of Arnett's psychological markers of adulthood?

A. Getting married
B. Finishing school
C. Having a first child of one's own
D. Financial independence

D. Financial independence Young people name responsibility, independent decisions and financial independence.

CHAPTER 12

Middle Adulthood

Read it in full: **Chapter 12 in the textbook**. Practice it in the lab: **Fluid Vs Crystallized** and **Midlife Crisis Myth**.

What to know

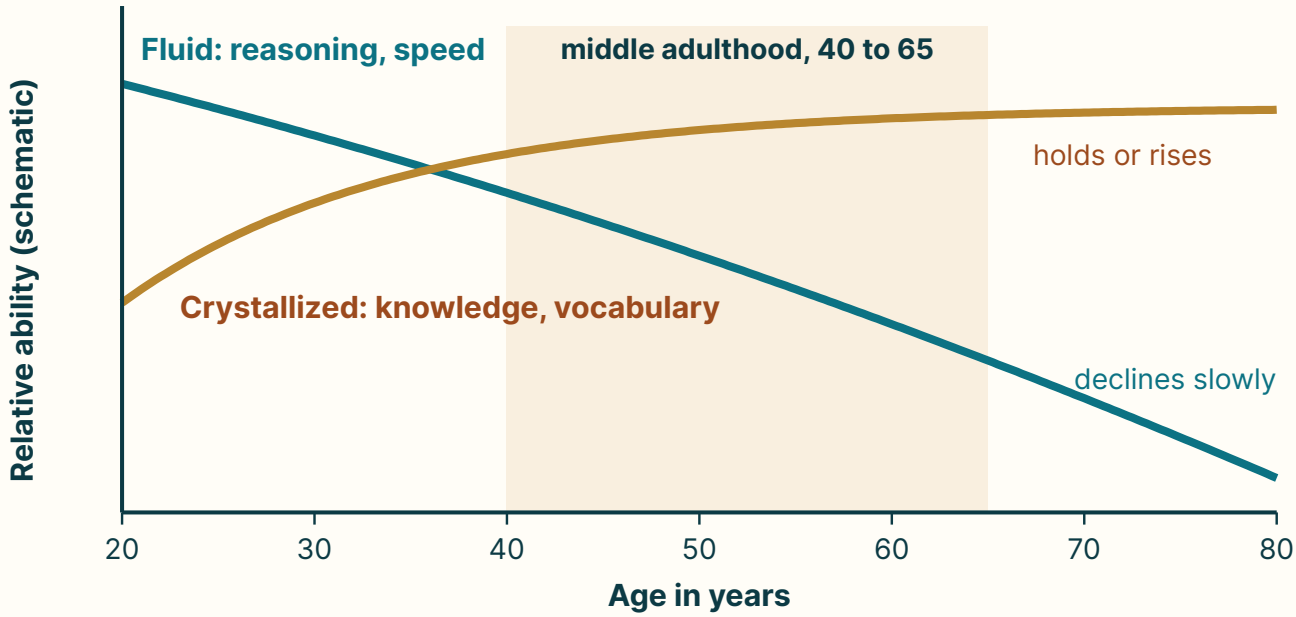
Primary aging is intrinsic; secondary aging comes from disease, disuse and lifestyle and is largely preventable. Midlife brings presbyopia, presbycusis, sarcopenia and arterial stiffening. Menopause, confirmed after 12 months without a period at about 51, ends fertility, and falling estrogen raises bone and heart risk; men have no abrupt equivalent.

Fluid intelligence peaks early and declines slowly, while crystallized intelligence holds or rises; Schaie's longitudinal study showed several abilities peak in midlife and that cross-sectional studies overstated decline. Expertise and Baltes's selective optimization with compensation let skilled adults outperform faster novices.

Erikson's generativity vs. stagnation yields care, expressed in many forms beyond parenting. Big Five traits are stable with a drift toward maturity, and the midlife crisis is largely a myth: MIDUS found crises in a minority, tied to events. Midlife is often the career peak, the sandwich generation carries double caregiving, and the empty nest usually raises marital satisfaction.

LOCK THESE IN

- Primary aging is intrinsic; secondary aging comes from disease and lifestyle and is largely preventable.
- Presbyopia (near vision), presbycusis (high frequencies), sarcopenia (muscle), arterial stiffening.
- Menopause: 12 months without a period; average about 51. Falling estrogen raises osteoporosis and heart risk.
- Fluid intelligence peaks early and declines slowly; crystallized holds or rises into late midlife.
- Seattle Longitudinal Study: several abilities peak in midlife; cross-sectional studies confused age with cohort.
- Baltes: selective optimization with compensation.



Two kinds of intelligence across adulthood (schematic). Fluid reasoning and speed decline slowly from early adulthood, while crystallized knowledge holds or keeps rising through midlife.

Fluid and crystallized intelligence

Feature	Fluid	Crystallized
What it is	Reasoning, working memory, speed	Knowledge, vocabulary, judgment
Depends on	Nervous system efficiency	Learning and experience
Peak	Early adulthood	Late midlife or beyond
Midlife trend	Gradual decline	Stable or rising
Example	Unfamiliar logic puzzle	Defining rare words; a familiar case

Worked case

WORKED CASE 1 · PRIMARY OR SECONDARY AGING?

At 52, Dale has reading glasses, gray hair, high blood pressure from years of smoking and inactivity, and weaker legs after a decade at a desk. Sort each change.

STEP 1 · INTRINSIC CHANGES

Presbyopia and graying are **primary aging**.

STEP 2 · LIFESTYLE-DRIVEN CHANGES

High blood pressure linked to smoking and inactivity is largely **secondary aging**.

STEP 3 · THE LEG WEAKNESS

Sarcopenia has a primary part, but disuse makes it worse, so much of it is secondary and can be slowed by strength training.

ANSWER

The secondary changes are the ones Dale can still change, and exercise is the most powerful single tool.

TRAPS PEOPLE FALL INTO

- **Treating all aging as inevitable.** Secondary aging is largely preventable.
- **Dating menopause from the last period alone.** It is confirmed after 12 consecutive months without one.
- **Saying men go through menopause.** Male testosterone declines gradually; there is no abrupt end to fertility.
- **Thinking intelligence simply declines in midlife.** Crystallized intelligence holds or rises, and several abilities peak.

Chapter 12 self-test · six items

1. Near-vision blur from a stiffening lens is

A. presbycusis
B. sarcopenia
C. presbyopia
D. glaucoma

C. presbyopia Reading glasses become near-universal in the mid-forties.

2. The years of fluctuating estrogen before menopause are called

A. perimenopause
B. andropause
C. the climacteric only in men
D. postmenopause

A. perimenopause Perimenopause brings hot flashes, night sweats and mood shifts.

3. Defining rare words draws mainly on

A. fluid intelligence
B. processing speed
C. crystallized intelligence
D. working memory capacity

C. crystallized intelligence Vocabulary and knowledge are crystallized.

4. A teacher with no children who mentors new teachers shows

A. stagnation
B. generativity
C. foreclosure
D. despair

B. generativity Generativity does not require children.

5. The maturity principle says that on average

A. agreeableness rises, neuroticism falls
B. neuroticism rises steadily with age
C. traits change completely at 40
D. openness doubles in midlife

A. agreeableness rises, neuroticism falls People become steadier, warmer and more dependable.

6. The family member who coordinates care across generations is the

A. proxy
B. boomerang child
C. alloparent
D. kinkeeper

D. kinkeeper Often a midlife woman.

CHAPTER 13

Late Adulthood

Read it in full: **Chapter 13 in the textbook**. Practice it in the lab: **Why We Age** and **Cognitive Continuum**.

What to know

Senescence comes from programmed processes (telomeres and the Hayflick limit, endocrine and immune clocks) and damage processes (free radicals, cross-linking) acting together. Much of what is blamed on age is secondary aging from disease and disuse. Sarcopenia and osteoporosis drive falls, reserve capacity shrinks, and presbyopia and presbycusis dim the senses.

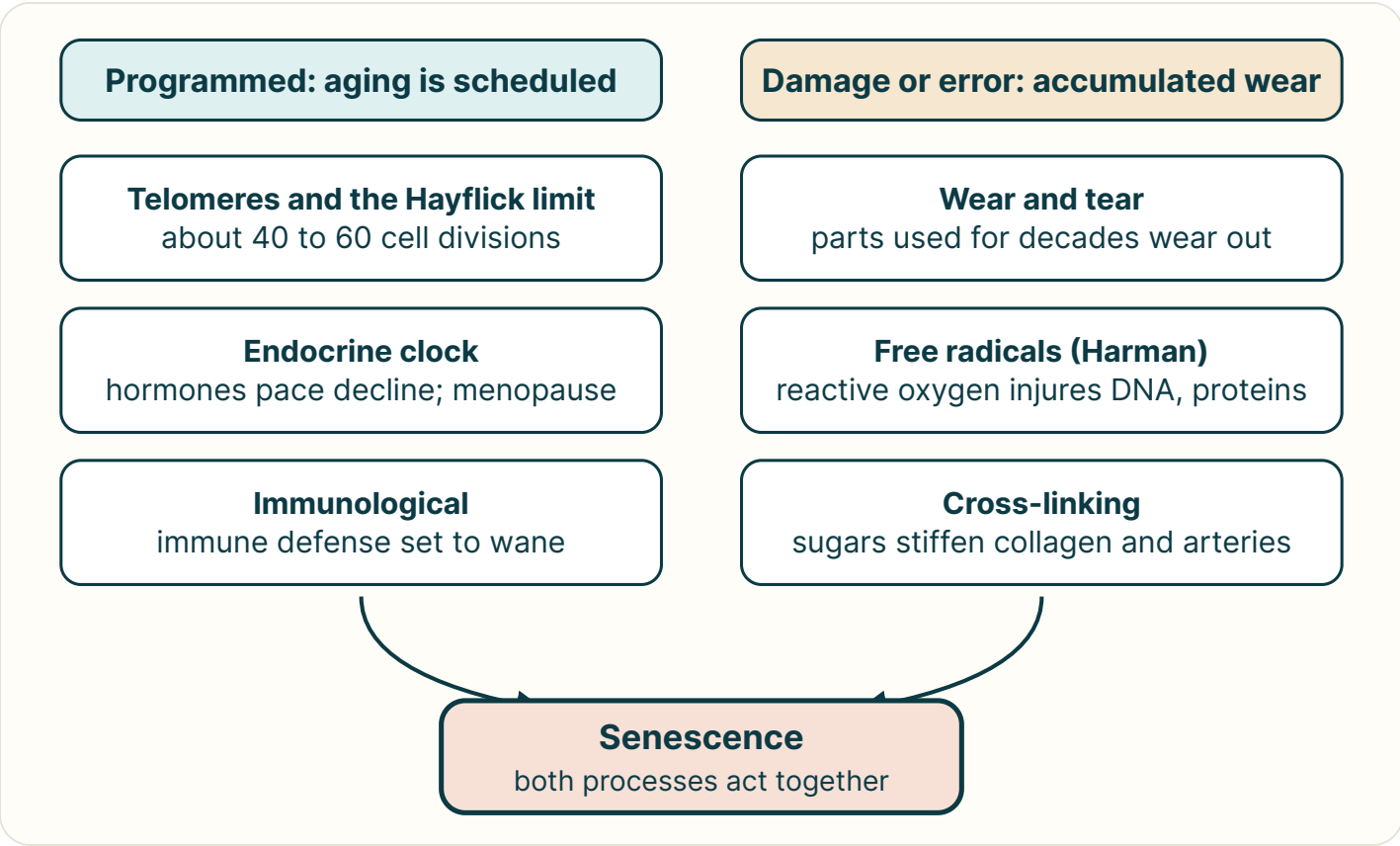
Crystallized intelligence holds while fluid intelligence slows; episodic and working memory slip while semantic and procedural memory hold; wisdom and emotion regulation can grow. Dementia

is not normal aging; Alzheimer disease, about two-thirds of cases, shows beta-amyloid plaques and tau tangles starting in the hippocampus.

Erikson's integrity vs. despair yields wisdom, helped by Butler's life review. Disengagement theory is largely rejected; activity, continuity and Carstensen's socioemotional selectivity fit the evidence. Rowe and Kahn define successful aging as health, function and engagement, and SOC describes adapting to loss.

LOCK THESE IN

- Programmed theories: telomeres and the Hayflick limit (about 40 to 60 divisions), endocrine, immunological.
- Damage theories: wear and tear, free radicals (Harman), cross-linking. Both camps act together.
- Primary aging is universal; secondary aging comes from disease, disuse and lifestyle and is often preventable.
- Sarcopenia and osteoporosis drive falls and fractures; reserve capacity shrinks.
- Presbyopia: near focus. Presbycusis: high frequencies first.
- Crystallized holds, fluid slows. Episodic memory slips; semantic and procedural are preserved.



Why we age: two families of theory. Programmed theories describe a built-in schedule, while damage theories describe wear the body cannot fully repair. Senescence comes from both at once.

Normal aging or dementia?

Feature	Normal aging	Dementia
Forgetting	Misplaces keys; recalls later	Forgets whole events
Words	Occasional tip-of-the-tongue	Frequent; wrong words
Daily life	Stays independent	Impaired: missed bills, getting lost
Course	Stable year to year	Progressive
Insight	Aware of lapses	Often unaware

Worked case

WORKED CASE 1 · NORMAL FORGETTING OR DEMENTIA?

Two 78-year-olds. Ruth sometimes cannot find her keys and blanks on a neighbor's name, which comes back an hour later; she manages her bills and drives. Hal has forgotten whole family visits, got lost on his usual route to the store and has missed several bills, but insists nothing is wrong. Sort them.

STEP 1 · WHAT IS FORGOTTEN

Ruth loses details and recalls them later. Hal loses whole events.

STEP 2 · DAILY FUNCTION

Ruth stays independent. Hal's daily life is impaired.

STEP 3 · INSIGHT

Ruth notices her lapses. Hal is unaware.

ANSWER

Ruth shows normal age-related change. Hal's pattern deserves evaluation for dementia. The key test is whether forgetting impairs daily life.

TRAPS PEOPLE FALL INTO

- **Picking one theory of aging.** Programmed and damage processes work together.
- **Calling telomere shortening a damage theory.** It is programmed: the cell counts its divisions.
- **Blaming every decline on age.** Much of it is secondary aging and can be prevented or reversed.

- **Thinking dementia is normal aging.** Most people in their eighties never develop it.

Chapter 13 self-test · six items

1. Sugars bonding to proteins and stiffening tissue is the

A. cross-linking theory
B. telomere theory
C. endocrine theory
D. immunological theory

A. cross-linking theory Cross-linking (glycation) contributes to stiff arteries and cataracts.

2. Why can the same pneumonia hit an 85-year-old harder than a 25-year-old?

A. The Hayflick limit stops immunity
B. Crystallized intelligence falls
C. Presbycusis affects the lungs
D. Reserve capacity is smaller

D. Reserve capacity is smaller Older organs have less spare margin for stress.

3. Tau tangles are found

A. between neurons
B. inside neurons
C. in the lens of the eye
D. in muscle fibers

B. inside neurons Beta-amyloid plaques build up between neurons; tau tangles form inside them.

4. Reminiscence therapy is based on

A. disengagement theory
B. the Hayflick limit
C. Butler's life review
D. Kübler-Ross's stages

C. Butler's life review Guided reminiscence can ease depression and restore worth.

5. Continuity theory says people age best by

A. withdrawing from society
B. reinventing themselves
C. keeping long-standing patterns
D. avoiding all activity

C. keeping long-standing patterns They carry forward personalities, interests and habits.

6. Rubinstein playing fewer pieces, practicing them more and slowing before fast passages shows

A. disengagement from performing
B. integrity versus despair
C. the positivity effect in later memory
D. selective optimization with compensation

D. selective optimization with compensation Selection, optimization and compensation in one example.

CHAPTER 14

Death, Dying and Bereavement

Read it in full: **Chapter 14 in the textbook**. Practice it in the lab: **Understanding Death** and **Grief Tasks And Types**.

What to know

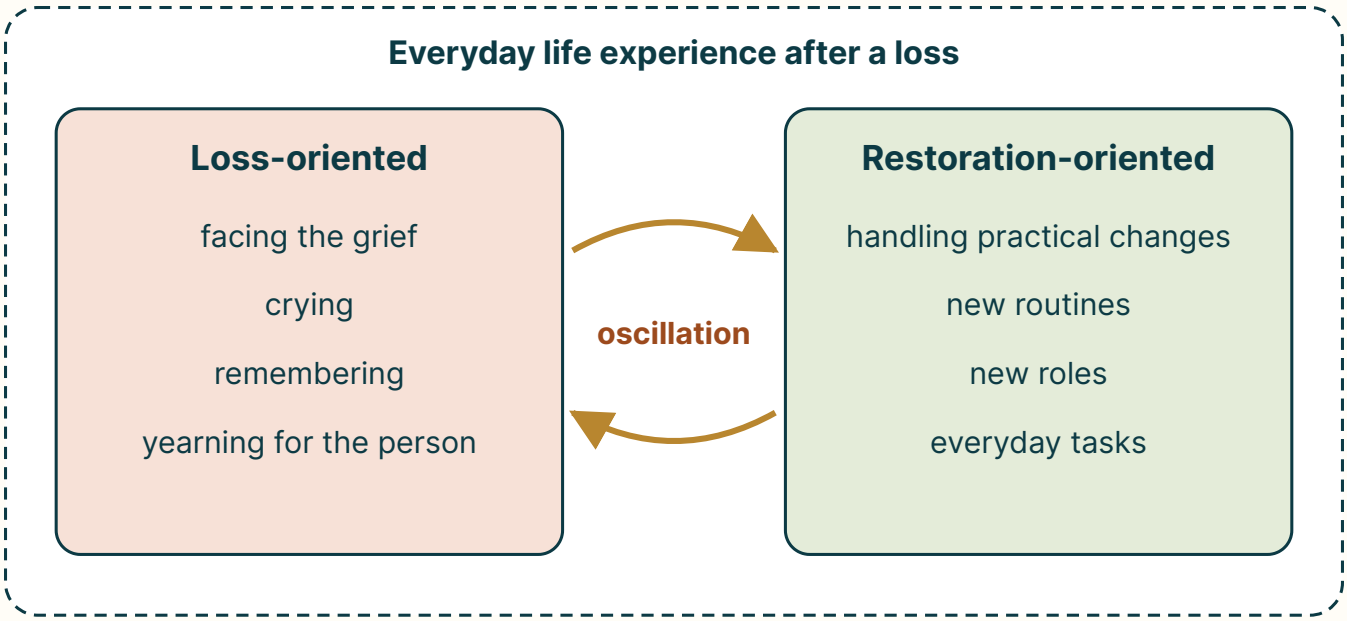
Clinical death can sometimes be reversed; brain death, the irreversible loss of all brain activity, cannot. Death is also social, managed through Kastenbaum's death system. Children build a concept with irreversibility, universality, nonfunctionality and causality, usually by 5 to 7, tracking Piaget's stages, and plain honest words help young children most.

Kübler-Ross's five stages (denial, anger, bargaining, depression, acceptance) describe common reactions but are not a fixed or required order. Palliative care relieves suffering at any stage and can accompany cure-focused treatment; hospice is comfort care near the end, born of Cicely Saunders's idea of total pain. Living wills, health-care proxies and DNR or POLST orders let people direct their care.

Bereavement is the loss, grief the inner response and mourning its outward expression. Worden's four tasks, the dual-process model's oscillation and continuing bonds describe healthy grief; prolonged grief disorder lasts a year or more and responds to treatment. Cultures and religions give death distinct rituals and meanings, so cultural humility means asking what a death means to this family.

LOCK THESE IN

- Clinical death can sometimes be reversed; brain death (all brain and brainstem activity) cannot.
- Kastenbaum's death system: people, places, times, objects, symbols.
- Four components: irreversibility, universality, nonfunctionality, causality; mastered about ages 5 to 7.
- Preoperational children see death as reversible; concrete operational children grasp all four.
- Kübler-Ross (1969): denial, anger, bargaining, depression, acceptance. Describe, do not prescribe.
- Palliative care at any stage, even with cure-focused treatment; hospice near the end (about 6 months), comfort only.



Stroebe and Schut's dual-process model. Healthy grieving moves back and forth between facing the loss and rebuilding daily life. Neither side alone is enough.

The concept of death by stage

Age and Piaget stage	Typical grasp	Still missing
Infant, sensorimotor (0 to 2)	Senses separation and absence	No concept of death
Preschool, preoperational (2 to 7)	Reversible, like sleep; a wish may have caused it	All four components
School age, concrete (7 to 11)	Final, universal, functions stop, physical causes	Abstract framing
Adolescence, formal (11+)	Abstract, philosophical reflection	Personal fable may blunt vulnerability

Worked case

WORKED CASE 1 · PALLIATIVE OR HOSPICE?

Mrs. Adeyemi is receiving chemotherapy for cancer with a good chance of remission, and a team helps with her nausea and pain. Mr. Lind has advanced heart failure; his doctor estimates a few months, and he has chosen to stop disease-directed treatment and focus on comfort at home. Name each type of care.

STEP 1 · MRS. ADEYEMI

Comfort care alongside curative treatment is **palliative care**.

STEP 2 · MR. LIND

Comfort-only care near the end of life, at home, is **hospice**.

STEP 3 · THE RULE

All hospice is palliative, but not all palliative care is hospice. Palliative is not giving up.

TRAPS PEOPLE FALL INTO

- **Treating clinical death and brain death as the same.** Clinical death may be reversible; brain death is not.
- **Assuming toddlers understand death is final.** Preoperational children often see it as reversible.
- **Using "went to sleep" with a young child.** Literal minds may fear sleep or wait for a return.
- **Using Kübler-Ross as a checklist.** The stages describe common feelings; they are not a required order.

Chapter 14 self-test · six items

1. Which component of the death concept says the dead do not come back?

A. Universality
B. Irreversibility
C. Nonfunctionality
D. Causality

B. Irreversibility Irreversibility means death is permanent.

2. A dying man says, "Just let me live to see my grandson born." Which stage does this resemble?

A. Bargaining
B. Denial
C. Anger
D. Acceptance

A. Bargaining Trying to negotiate a reprieve is bargaining.

3. Hospice typically begins when a physician estimates

A. six months or less
B. two years or less
C. one week or less
D. any serious illness

A. six months or less The goal shifts fully to comfort.

4. Worden's first task of mourning is to

A. let go of the person entirely
B. accept the reality of the loss
C. reach closure within one year
D. avoid reminders of the person

B. accept the reality of the loss The tasks are accept, process the pain, adjust and find an enduring connection.

5. A seven-day period of receiving visitors after a burial is

A. antyeshti
B. ofrenda
C. shiva
D. a wake

C. shiva Shiva is part of Jewish mourning practice.

6. Grief that comes in waves tied to reminders and preserves self-worth is most like

A. major depression
B. prolonged grief disorder
C. denial
D. normal grief

D. normal grief Depression is more pervasive and marked by worthlessness.

ONE PAGE

Cram sheet

Every stage, name and number in the course, sorted by topic. Cover the right column and rebuild each row. If a row will not come back, go to that chapter's exam guide.

Periods of life

Period	Ages (approximate)	Key change
Prenatal	Conception to birth	Germinal 0 to 2 wk; embryonic 3 to 8; fetal 9 to birth
Infancy and toddlerhood	Birth to 2	Fastest growth; sensorimotor; attachment
Early childhood	2 to 6	Symbolic thought; initiative; play
Middle childhood	6 to 11	Concrete operations; industry; peers
Adolescence	11 to 18	Puberty; formal operations; identity
Early adulthood	18 to 40	Physical peak; intimacy; work
Middle adulthood	40 to 65	Generativity; crystallized gains
Late adulthood	65 on	Integrity; selectivity; wisdom

Erikson's eight stages

Stage (age)	Crisis	Virtue
Infancy (0 to 1)	Trust vs. mistrust	Hope
Toddler (1 to 3)	Autonomy vs. shame and doubt	Will
Preschool (3 to 6)	Initiative vs. guilt	Purpose
School age (6 to 12)	Industry vs. inferiority	Competence
Adolescence (12 to 18)	Identity vs. role confusion	Fidelity
Young adult (18 to 40)	Intimacy vs. isolation	Love
Midlife (40 to 65)	Generativity vs. stagnation	Care
Late life (65+)	Integrity vs. despair	Wisdom

Piaget and the mind

Stage	Ages	Hallmark
Sensorimotor	0 to 2	Object permanence; six substages; A-not-B error
Preoperational	2 to 7	Symbols; egocentrism; centration; no conservation
Concrete operational	7 to 11	Reversibility; conservation; class inclusion; seriation
Formal operational	11+	Abstract, hypothetical, hypothetico-deductive
Postformal (adult)	Adulthood	Relativistic, dialectical, pragmatic

Genetics, birth and infancy numbers

Item	Value	Note
Chromosomes	46 (23 pairs)	Gametes carry 23
Dominant / recessive odds	About 50% / about 25%	Per child; per pregnancy
Viability	About 22 to 24 weeks	Neural tube closes week 4
Labor stages	12 to 14 h; minutes to 2 h; 5 to 30 min	First birth
Preterm / LBW	Before 37 weeks / under 2,500 g	VLBW under 1,500 g
Apgar	0 to 10 at 1 and 5 min	7 to 10 fine; 4 to 6 help; below 4 emergency
Infant weight	Double by 5 months; triple by 12	Brain 25% to 75% by 2
Language	Coo 2, babble 6, words 12, spurt 18, two-word 24 months	Comprehension first
Attachment shares	Secure 60 to 65%; avoidant 15 to 20%; resistant 10 to 15%; disorganized 5 to 15%	Western samples

Childhood to adulthood numbers

Item	Value	Note
Preschool brain	About 90% of adult weight by 5 to 6	Handedness by about 5
Vocabulary at 6	About 10,000 words understood	Fast mapping
Theory of mind	About age 4	False-belief test
Deviation IQ	Mean 100, SD 15	About two-thirds 85 to 115
Puberty onset	Girls about 10 to 11; boys about 11 to 12	Secular trend earlier
Prefrontal maturity	Mid-twenties	Dual-systems model
Teen sleep need	8 to 10 hours	Circadian phase delay
Peer conformity	Peaks about 13 to 15	Then declines
Peak bone mass	About 30	Aerobic decline about 1% a year after 30
Emerging adulthood	About 18 to 25	Arnett
Menopause	Average about 51	After 12 months without a period
Hayflick limit	About 40 to 60 divisions	Telomeres
Alzheimer share	About two-thirds of dementia	Plaques and tangles
Death concept	Four components by about 5 to 7	Speece and Brent, 1984
Hospice	Prognosis about 6 months	Saunders, 1967
Prolonged grief	A year or more	Treatable

Thinkers and their ideas

Name	Idea
Freud	Id, ego, superego; psychosexual stages
Pavlov, Watson, Skinner, Bandura	Classical and operant conditioning; observational learning
Vygotsky	ZPD, scaffolding, private speech
Bronfenbrenner	Micro, meso, exo, macro, chrono
Bowlby, Ainsworth, Main and Solomon	Attachment; Strange Situation; disorganized pattern
Thomas and Chess; Kagan	Temperament; goodness of fit; behavioral inhibition
Baumrind	Authoritative, authoritarian, permissive, uninvolved
Kohlberg; Gilligan	Moral levels; ethic of care
Spearman, Cattell and Horn, Gardner, Sternberg	g; fluid and crystallized; multiple; triarchic
Elkind; Marcia	Imaginary audience, personal fable; identity statuses
Arnett; Sternberg (love); Hazan and Shaver	Emerging adulthood; triangle of love; adult attachment
Schaie; Baltes; McAdams	Seattle study; SOC; generativity
Hayflick; Harman; Carstensen; Rowe and Kahn	Cell limit; free radicals; selectivity; successful aging
Kübler-Ross; Saunders; Worden; Stroebe and Schut	Five stages; hospice; tasks of mourning; dual-process model

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