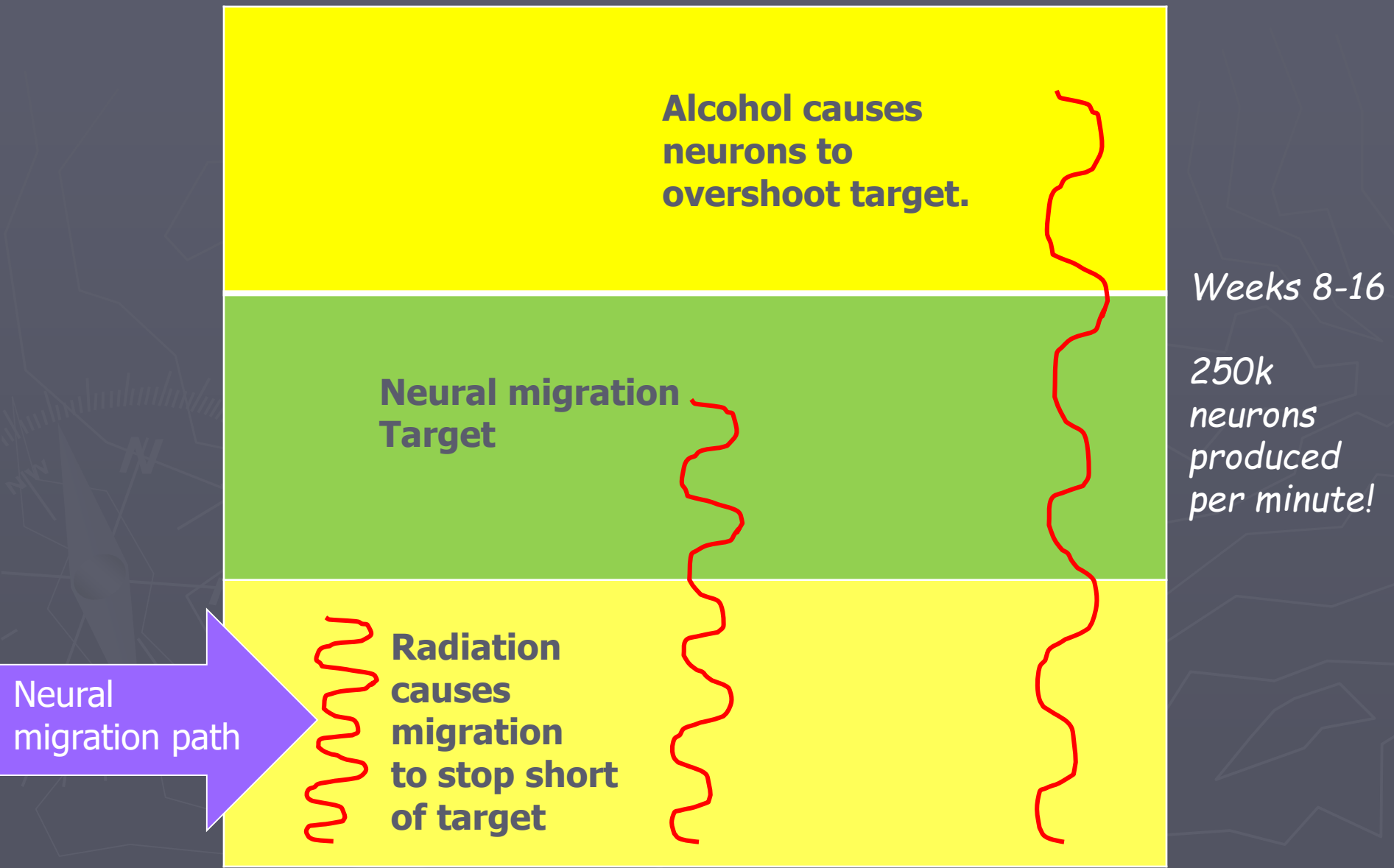
Each neuron has a genetic code that tells it where it should be located in the brain. Teratogens can cause the migration of neurons to miss their target by stopping short or by overshooting the target. "Function follows position," so if neurons are not where they are programmed to be, the brain can suffer from deficiencies.



What are the CHARACTERISTICS of FETAL ALCOHOL SYNDROME (FAS)?

- Leading cause of intellectual disability (formerly MR,) or some degree of mental disability
- Short attention span
- Hyperactivity
- Social and behavior problems
- Abnormally small at birth
- Small head circumference
- Small, widely spaced eyes
- Flat mid-face
- Thin upper lip and underdeveloped jaw

FETAL ALCOHOL EFFECT (FAE)

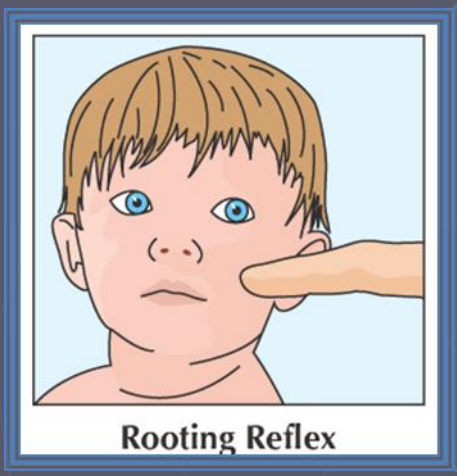
- Less severe set of FAS symptoms
- Mothers who drink moderately or lightly while pregnant may have a child with Fetal Alcohol Effect (FAE)
- The brain of babies with FAE may have varying degrees of damage.

Developmental Psychology

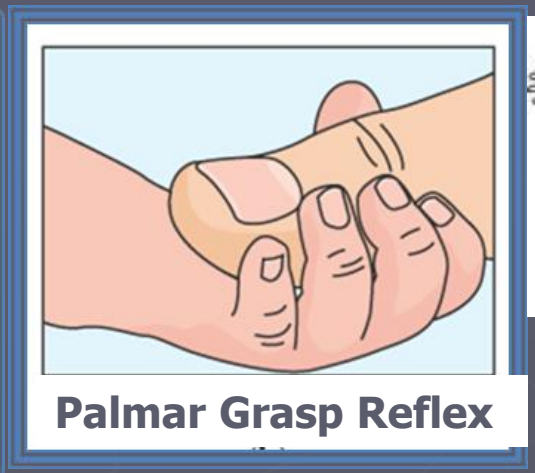
Infancy and Childhood

So what will a healthy newborn do?

"Infant Reflexes"

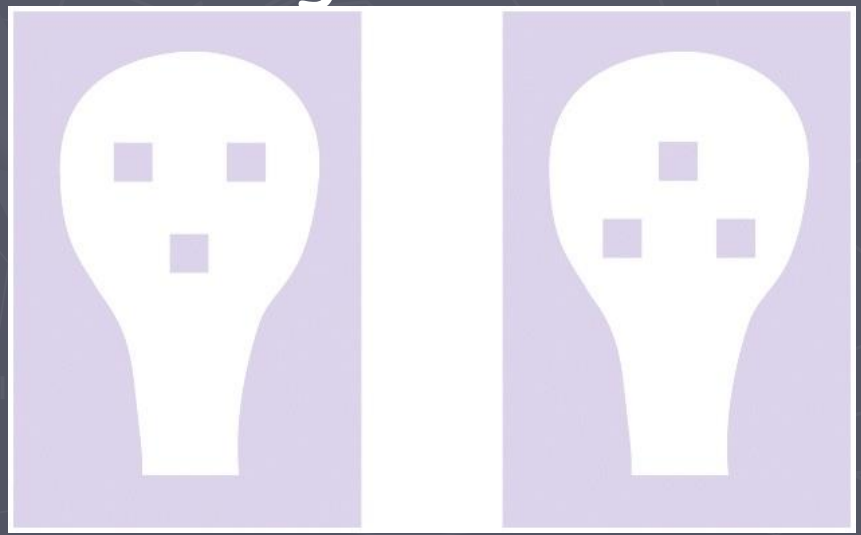

Rooting Reflex


Babinski Reflex


Palmar Grasp Reflex


Moro Reflex

Turn towards human voices.
Gaze longer at human face like images.



Infant Reflexes – infants are born with a number of reflexes to get them through life, and they are incredibly cute when they perform them. These reflexes disappear as they mature.

Rooting

What provokes the response? Stroking of the infant's cheek

What the infant does Head turns in the direction of the touch, and the infant opens his or her mouth for feeding.

Palmar Grasp

What provokes the response? Something that is placed in the infant's hand

What the infant does The infant grasps the item and can hold on very well—almost enough to support his or her own weight.

Babinski

What provokes the response? Stroking of the inner or outer sole of the infant's foot

What the infant does If the inner sole is stroked, the infant curls his or her toes. If the outer sole is stroked, the toes spread out.

Moro or startle

What provokes the response? Sudden noise or movement

What the infant does The infant throws his or her head back and arms and legs out (and then cries).

Capabilities of the newborn

Habituation

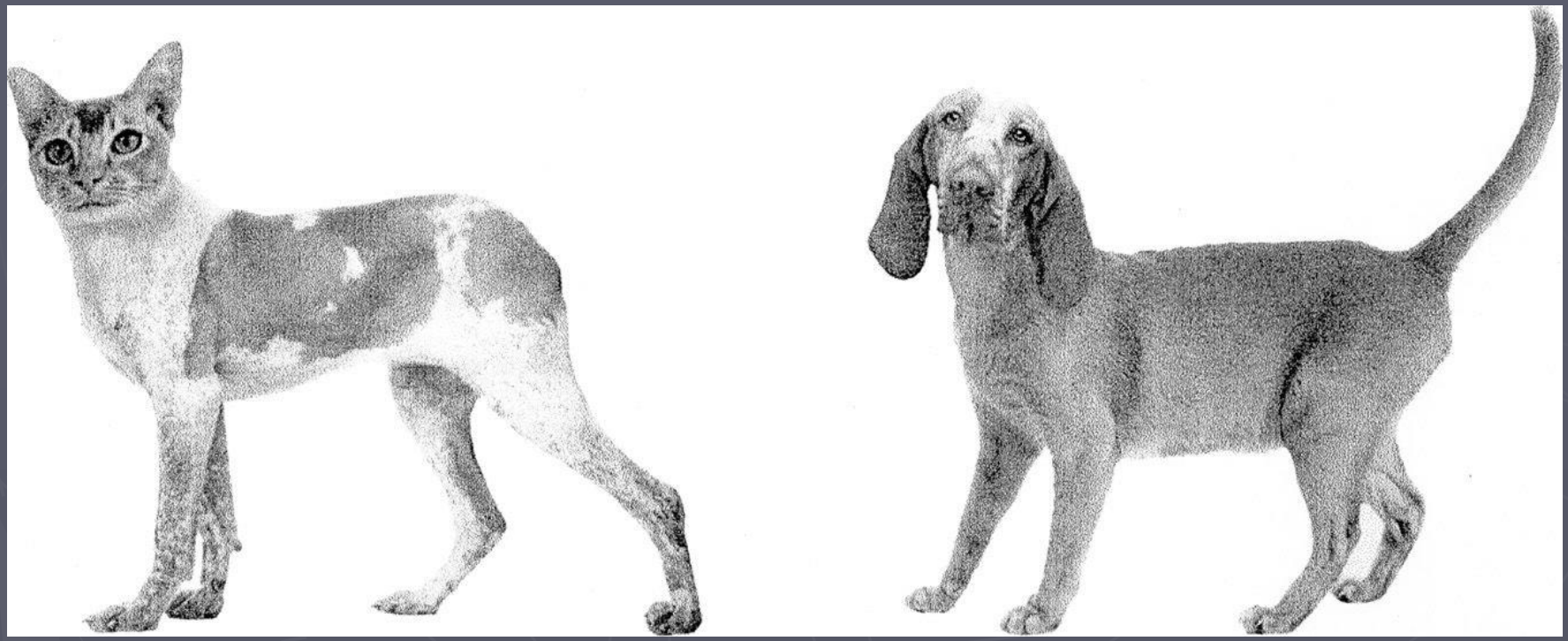
- **The Habituation Method**- is the process whereby a repetitive stimulus becomes so familiar that responses initially associated with it no longer occur.

-OR-

- A novel stimulus gets attention when first presented. The more often the stimulus is presented, the weaker the response becomes.

Habituation of a startle response

Dishabituation

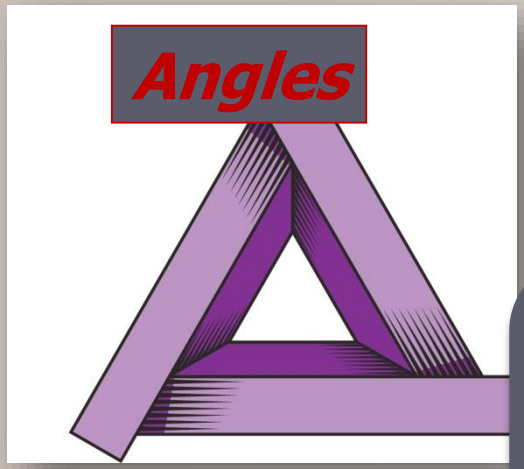


This study indicated that infants, like adults, focus first on the face, not the body.

Habituation and Cayenne Pepper

Newborn Competencies: Sensory Abilities

Visual Abilities: What do newborns like to look at?



Angles

Circles and bulls-eyes

Research shows that newborns prefer and attend to these visual stimuli in their environment:

Contrasts, especially black and white

Eyes/ Faces

Primary colors

How do brain and motor skills develop?

Good News

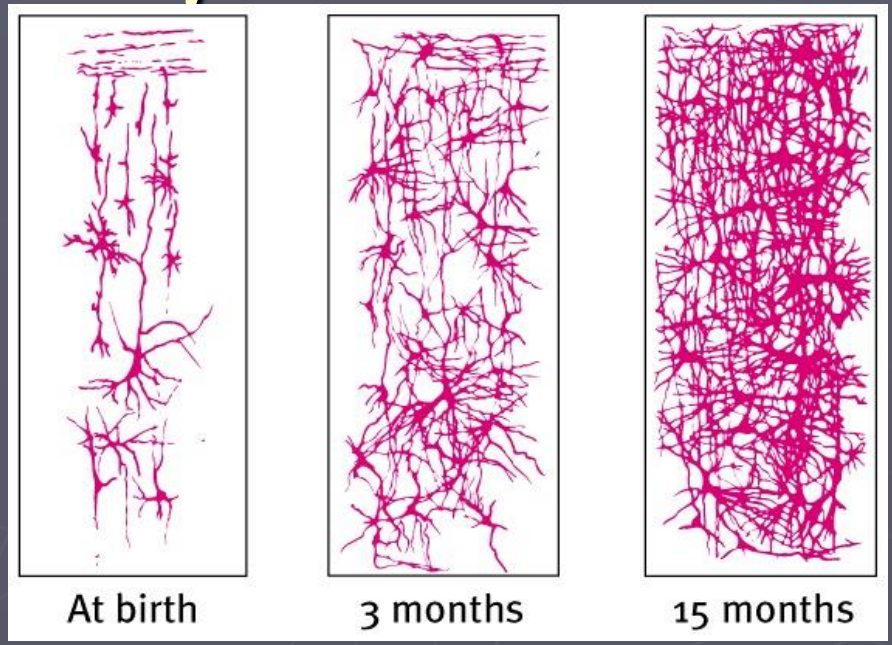
- While in the womb, you produce almost ¼ million brain cells per minute.

Bad News

- That is basically all you are ever going to develop.

The Brain and Infancy

- Although the brain does not develop many new cells, the existing cells begin to work more efficiently- forming more complex neural networks.



Preschoolers show rapid development of their frontal lobes, which explains why they may begin to be able to control their attention and behavior.

Maturation

- Biological growth processes that enable orderly changes in behavior, relatively uninfluenced by experience.
- Which means - to a certain extent we all maturate similarly, but the time can vary depending on the person.

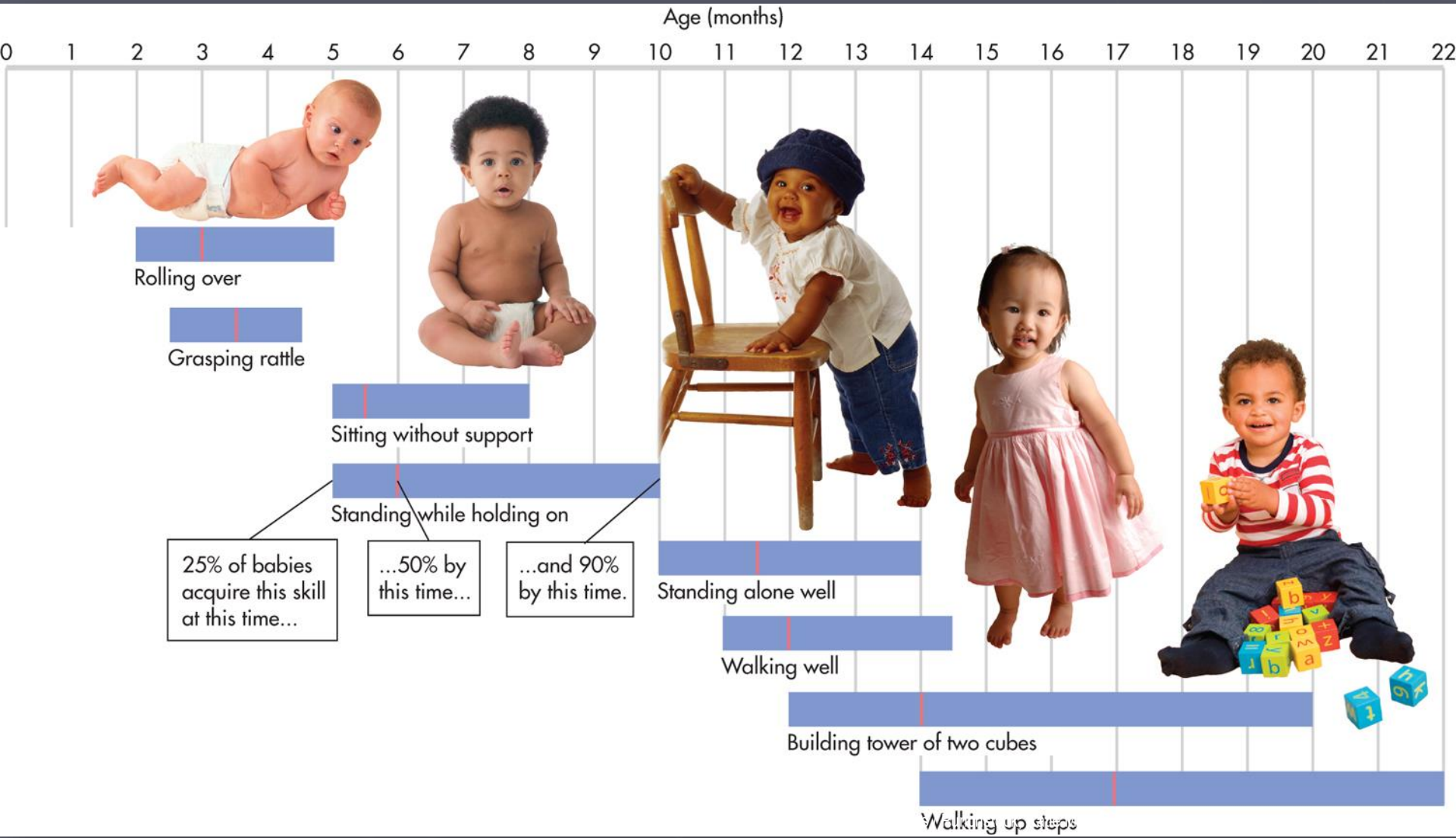
"Maturation sets the basic course of development, experience adjusts it."

Motor Development

- Opportunities to safely explore the environment develop the body and brain.
- Sequence is the same- but once again timing varies.
- First learn to roll over, sit up unsupported, crawl, walk etc…

Motor Development: Birth to 3 yrs

►MATURATION: gives doctors and parents a timetable to measure progress



REVIEW: Infantile amnesia

- What is infantile amnesia?
  - The inability of individuals to remember the very earliest years of their lives.
- Most adults recall nothing from their first 3 years of life.
  - Much of our explicit memory is indexed with language, nonspeaking children cannot do this.
  - The hippocampus is one of the last brain structures to develop.
- Children who were 4-5 years old at the time of a fire accurately remembered details about the emergency fire when 7. Those who were 3 at the time could not recall the cause of the alarm or the events surrounding it accurately.

Maturation and infant memory

- Even though we consciously recall little before 4, our memories work in early years.
- 3 month-old infants will remember that moving their leg will make a mobile move.
- When placed with another mobile, they did not try to control the mobile with their legs. (They remembered the original mobile and recognized the difference)
- When placed with the original mobile 1 month later, they still remembered their ability to move the mobile.

Rovee-Collier and infant memory