



Infancy and Development

B.M.C. Durfee High School

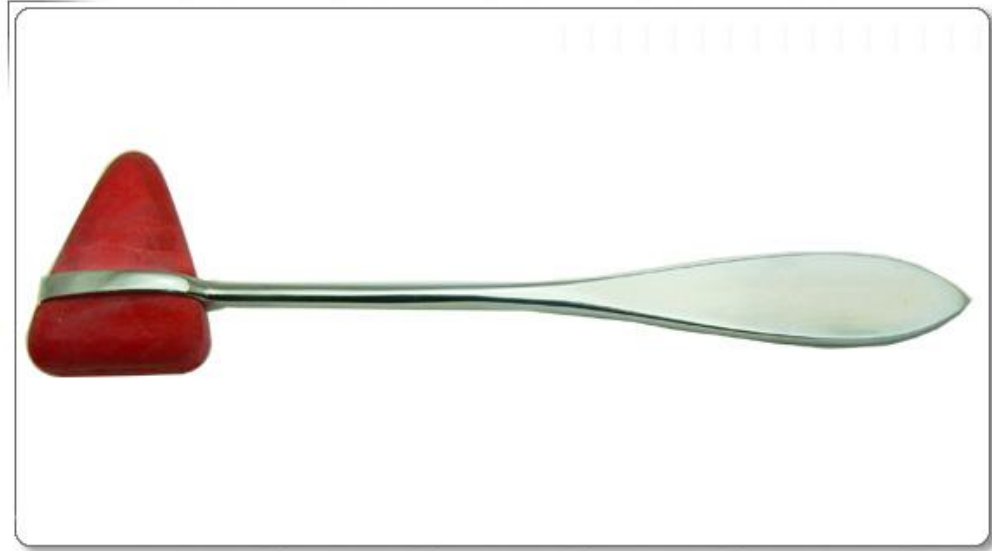
Objectives

- Identify common infant reflexes
- Explain why reflexes are important to development and growth
- Identify factors that can effect growth



Reflexes

- Reflexes: newborn is helpless but has some reflexes



Breastfeeding Reflexes

- Sucking
- Rooting



Rooting & Sucking Reflex



Other Reflexes

- Moro reflex (arms embrace when lost support of head)



Other Reflexes...

- Babinski reflex: big toe curls down when foot is stroked



Other Reflexes...

- Grasping, Blink, smile, sneeze, cough and gag





Why Reflexes?

- **Human Newborns are helpless compared to other animals**
 - **Main way of helping self is to cry**
 - **Humans are the slowest maturing primate**
 - **Parents are in demand but more learning period**
 - **Human newborns are helpless but ready to learn**



Child Development Video

Final Project
ECD 211
Spring 2009
Professor Patet

Infancy

- Period of nursing
- Usually 4 years in humans
 - Not norm in US and Canada
 - Norm in chimps, gorillas, foragers, etc.
 - Probably norm in evolutionary past





Breast Milk

- Low in fat and protein
- Low nutrient content is common in species whose mothers are seldom or never separated from their infants and nurse in short frequent bouts





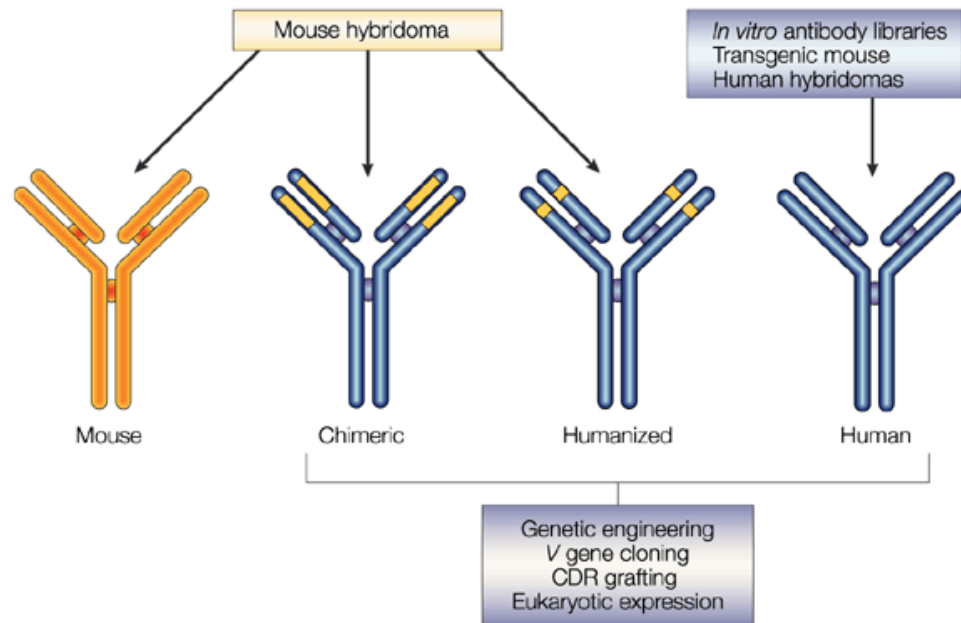
Breast Milk...

- Prolonged frequent nursing suppresses ovulation and this helps to maintain a 4 year birth interval with no competition for milk from siblings
- Natural birth control method (doesn't always work in humans)



Breast Milk...

- Antibodies contribute to infant survival
- Breast fed infants have far greater survival rates except where scientifically designed substitutes are available and correctly used



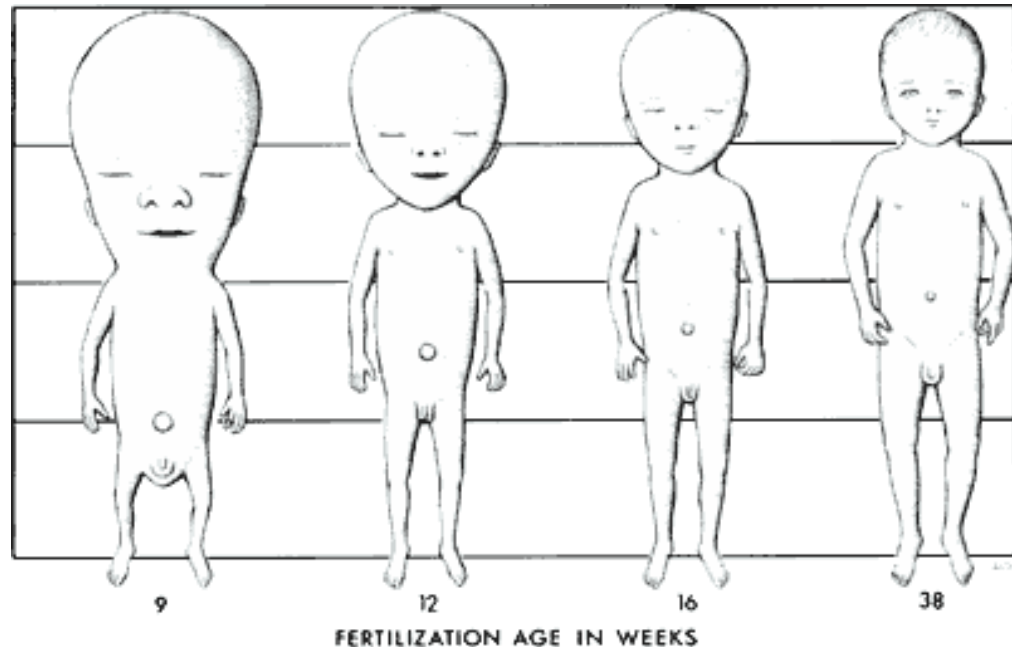
Nestle Controversy

Child Growth & Development



Infant Biology

- About 7.5 pounds and 20" long
- Head and neck are 30% of the body (adults 10%)
- Legs are only 15% of body (adults 50%) and weak



Infant Biology...

- Body made of a lot more water
- Large brain early in life (cranial); doubles in size the first year and is adult size by age 10



Infant Biology...

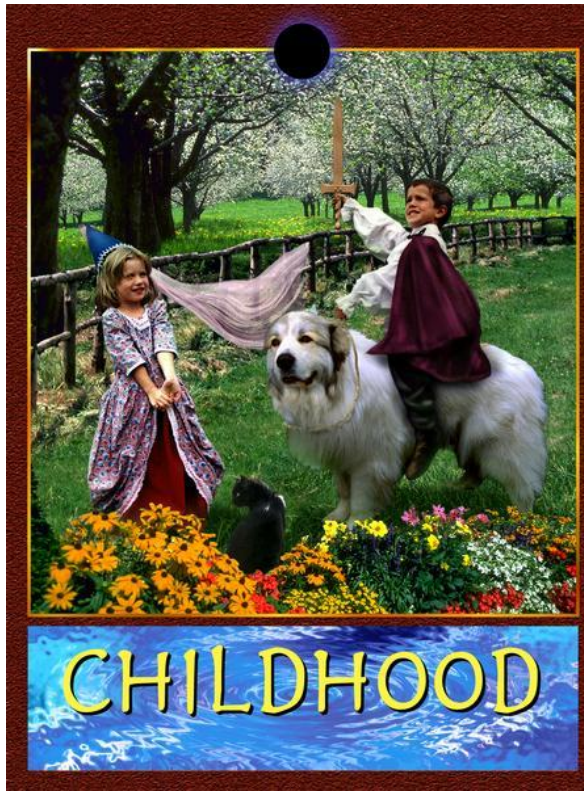
- Brain grows in cell size, not cell number; make more connections, more fatty myelin sheaths
- Length, chest circumference increase



Childhood

- Humans have really long childhoods – importance of learning for our species
- Childhood is the time between weaning and puberty when the brain is completing its growth and getting technical and social skills

Child Growth & Development





Childhood...

- Most mammals are left to get their own food when weaned
- Humans are unique to provide food for children and juveniles



Childhood...

- This is extra care but increases the survival rate
- Roles of fathers and siblings is very important; as mothers care for younger siblings they are involved in socializing and providing child care



Child Biology

- Rapid neurological development
- Gradual increases in organ sizes, height and weight, more neuromuscular control
- Learn to speak



Child Biology...

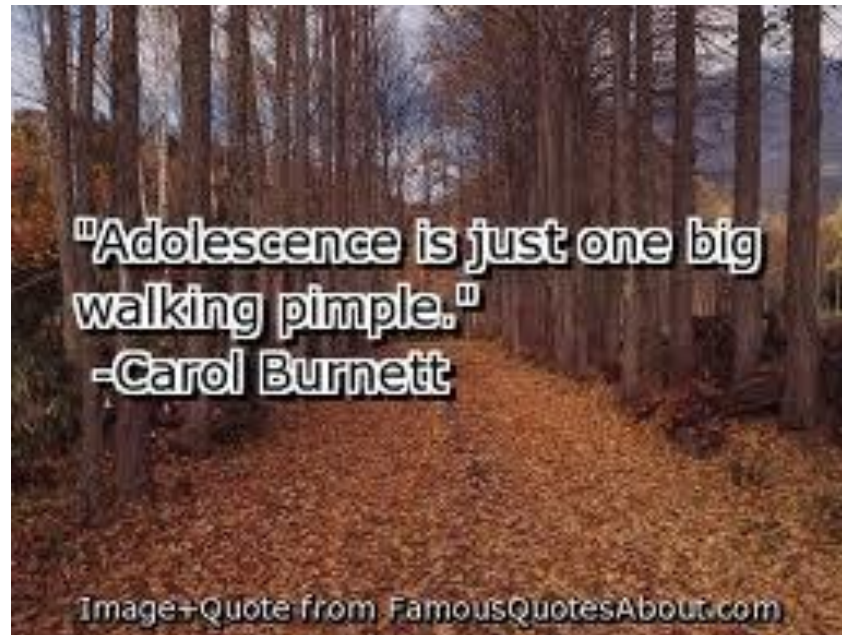
- Men do take longer for neurological development
- Increased height and length of legs (epiphyseal growth)
- By 10, skull is like that of an adult





Adolescence

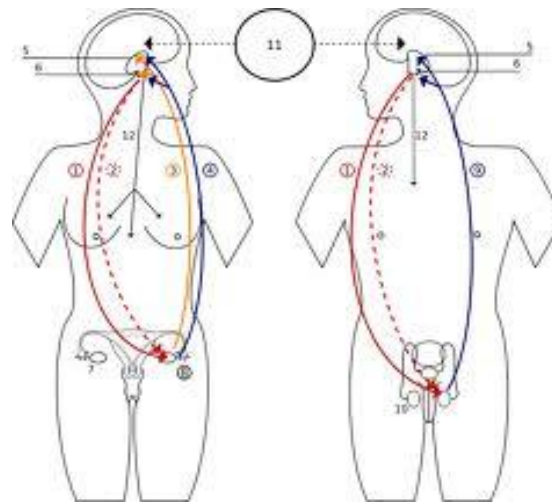
- Number of biological events mark the transition to adulthood
 - Increase in body size
 - Change in shape
 - Testes, penis, breasts





Adolescence...

- Hormonal change is behind these physical changes (more testosterone and estrogen)
- Menarche – the first menstruation is a clean sign of puberty and is often celebrated
- Females reach sexual maturity before males though not capable of becoming pregnant until years after their first period



Adolescence...

- **Number of factors effect puberty**
 - **Genetics**
 - **Nutrition**
 - **Disease**
 - **Stress**





Earlier Periods

- Lower age of menarche in human populations in the last hundred years
- More obesity, earlier periods
- Need some body fat and fatter girls have periods first
- Now seeing decline in age of first menarche



Reaction Norm

- There are many things that effect growth and nutrition





Factors that Affect Growth

- **Genetics**
- **Neural Control**
- **Hormones**
- **Nutrition (post war Germany, hard to test)**
- **Secular Trends**
- **Socioeconomic Class**
- **Season and Climate (height is faster in spring, weight in Autumn)**

Factors that Affect Growth...

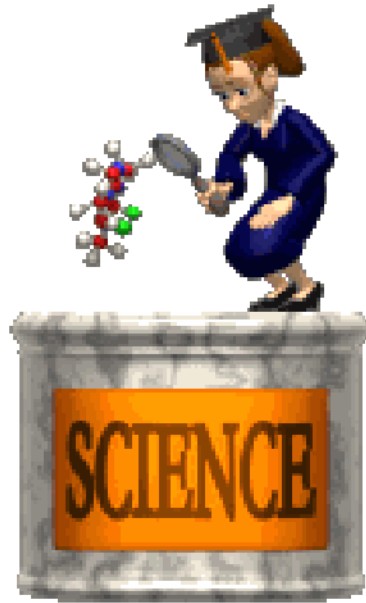
- Exercise
- Disease
- Antenatal Insults
- Emotion



Review

- Identify common infant reflexes
- Explain why reflexes are important to development and growth
- Identify factors that can effect growth





Learn Long
Live Long