

# Pediatric Growth & Development

Presented by  
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# Growth

The physical changes:

Height

Weight

Vital signs

Vocabulary

# Development

Increase in capability or function:

Milestones in ability (sitting, walking, talking)

Communication

Motor skills

Emotions

# Cephalocaudal Development

- Fetal development- size of head at birth in relation to rest of body

## Proximo-distal Development

- Gross motor movement
- Fine motor movement



# Principles of Growth and Development

What is an example of each of the following method of growth:

- Simple to complex
- General to specific

# Periods of Growth

- Fetal
- Birth-infancy
- Puberty

# Stages of Growth and Development

- Newborn- 0 to 1 month
- Infant- 1 month to 1 year [page 79](#)
- Toddler- 1 year to 3 years
- Preschool- 3 years to 6 years
- School age- 6 to 11 or 12 years
- Adolescence- 11 or 12 years to 21 years

# Piaget

## Intelligence

(ability to solve problems)

VS

## Habituation

(time between infant's response and cessation of the response)

The shorter the habituation, the higher the potential intelligence...these children get bored by repetition...  
fast thinkers



# Erikson

- Trust –vs- Mistrust
- Autonomy –vs- Shame & Doubt
- Initiative –vs- Guilt
- Industry –vs- Inferiority
- Identity –vs- Role Confusion
- Page 56-57

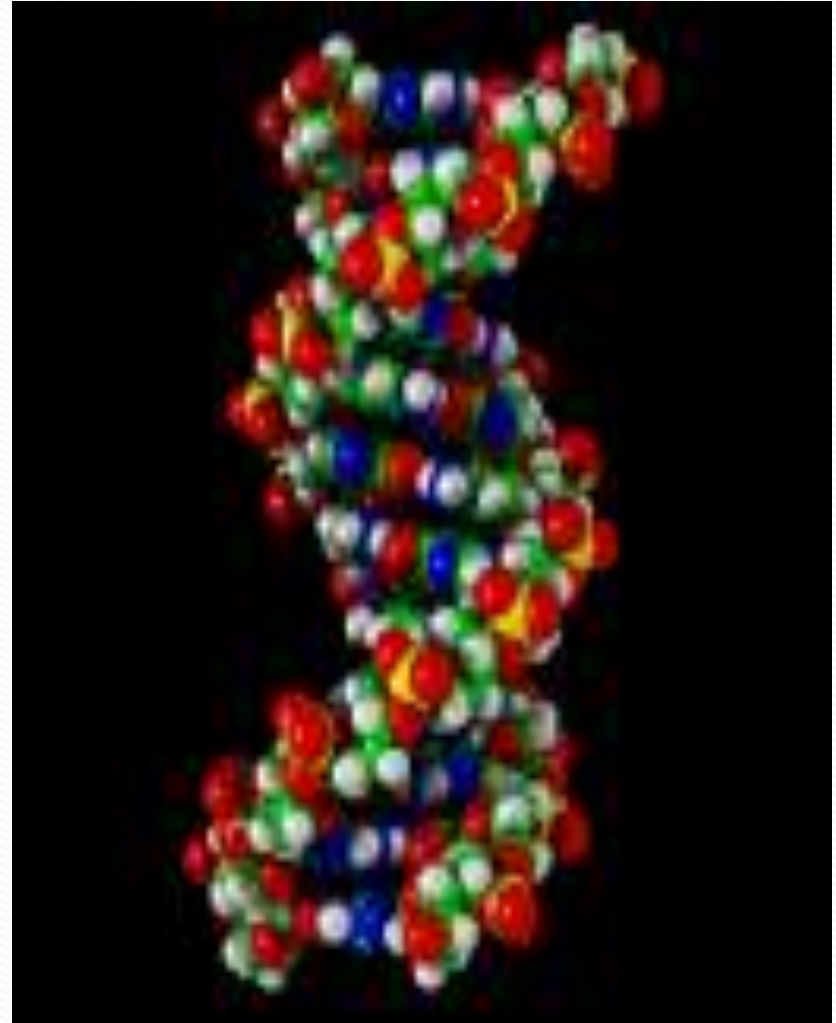
# What factors influence growth?

## How?

- Genetics
- Environment
- Culture
- Nutrition
- Health status
- Family

# Genetic influences

- What is the most obvious effect of DNA on growth?
- Approximately  $\frac{1}{4}$  of children hospitalized related to a genetic disorder



# Environment

- Page 54- environmental history
- Is culture a part of environment?



# Nutrition

- Availability of foods
- Financial status
- Cultural practices
- Ability to absorb nutrients



# Health Status

- Chronic illness
- Acute illness
- Congenital anomalies

# Family

How does placement within a family effect development?

How does the definition of family differ for some children?

# How do we measure growth?

- Charts
- Comparison to self over time
- X-rays
- Teeth
- Ht, wt, and FOC
- Length of bones (what do we measure)



(Birth weight doubles by 5<sup>th</sup> month, triples by 1 year)



# Denver Developmental Screening Test

## II

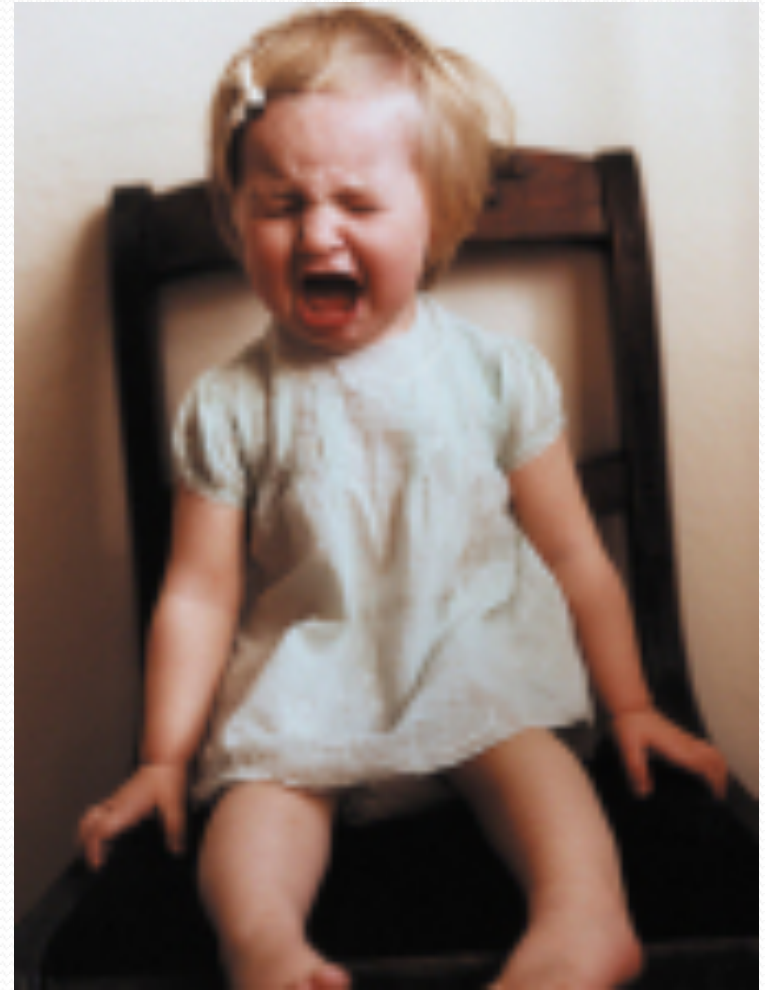
### Areas of assessment

- Personal- social (help with simple tasks-dressing self)
- Fine motor-adaptive (stacking blocks or holding crayon)
- Language (verbalizes words as commands or sentences, correctly follows directions or points to simple pictures)
- Gross motor (hops, skips, balances on one foot)
- Not an IQ test

# Emotional Growth & Development


- All emotions contain:
  - feelings
  - impulses
  - physiological responses
  - reactions (internal and external)

- Emotions will come out one way or another
- How can the nurse help the child respond constructively to these feelings?



Emotions: feelings, impulses, physiological responses and reactions (internal & external)

- Why is it important to document the client's emotional assessment?
- What criteria does a nurse use to document emotions?
- What do you document?

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- Subjective- joy anxiety, content, anger
  - Objective- facial expressions, laughter, crying, changes in VS

# Give examples of the types of play:

- Solitary
- Parallel
- Associative
- Cooperative
- Onlooker



# Stages of Play

- What stage in childhood do these stages represent?
  - Practice play- peek-a-boo? Riding a bike?
  - Symbolic play- playing a princess or cowboy?
  - Games- board games, competitive sports?

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- Why is it important for the nurse to understand appropriate play for developmental stage?



How do the types of play assist children to adapt to their changing environments (hospitalization) ?

- Dramatic Play
- Familiarization Play

# Nutritional Needs for Growth

- Infancy- breast milk is best... Why?
- Toddler- physiologic anorexia food presentation preferences
- Preschool- food jags
- School aged- what teaching techniques would you use to teach these children? What developmental stage?
- Adolescent- what additional information regarding growth spurt?

# What teaching should the nurse include regarding:

- Bottle feeding?
- Dental caries- prevention and treatment?
- Eruption of teeth (deciduous & permanent)
- Orthodonture
- Oral hygiene
- Referral to Dentist

# Nurses role in administration of immunizations:

- AAP guidelines for immunization
- Informed consent
- Provide additional information- act as advocate for child/family
- Teach side effects
  - Prevent fever/pain
  - When to notify primary healthcare provider



What equipment must the nurse have on hand to safely administer immunizations?

- What represents the greatest risk to these patients?

# Obstacles to Immunizations

- Complexity of healthcare system
  - Types of clinics
  - Scheduling
- Financial barriers
- Misconceptions- safety/complications/ severity of disease
- Inaccurate record keeping
- Lack of awareness of the need for immunizations

# Tanner Staging

- Based on appearance of secondary sexual characteristics
- Males and females develop at differing rates
  - Physical
  - Cognitive
  - Psychosocial

# Preventive Health Maintenance

- Primary
- Secondary
- Tertiary



# Greatest Health Risks by Age:

- Infancy
- Early Childhood
- School Age
- Adolescence

# Major childhood prevention measures

- Aspiration
- MVA
- Burns
- Drowning
- Bodily injury/fractures

# Aspiration

- Leading cause of fatal injury under 1 year of age
- **Prevention:**
  - Inspection of toys, small parts
  - Out of reach objects
  - **Selective elimination** of certain foods
  - **Proper posturing of the infant for feeding**
  - Pacifier with one piece construction

# Motor Vehicle Accidents:

- Vehicular risk greatest when child improperly restrained
- Pedestrian
- Prevention

# Burns:

- Children are inquisitive
- Become able to climb and explore
- Prevention of household injury:
  - Scalding (cooking, steam, baths)
  - Touching sources of fire

# Drowning

- Child does not recognize danger of H<sub>2</sub>O
- Unaware of inability to breath underwater
- No conception of water depth
- Hypoxia greatest concern
- Prevention


# Injuries/ Fractures

- Still developing sense of balance
- Easily distracted from tasks
- Prevention
- Nurses obligations

What is the major preventive  
against poisoning?





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- Common in early childhood (2 yrs)
  - 75% poisons are ingested
  - Major reason for poisoning:

- Sources of poison:
  - Cosmetics
  - Household cleaners
  - Plants
  - Drugs- medications
  - Insecticides
  - Gasoline
  - Household items

# Priority Interventions

- In every instance, medical evaluation is necessary
- Call poison control center 1<sup>st</sup>
- Remove child from exposure
- Identify poison
- Prevent absorption

# Why don't we use Ipecac?

- What is greatest risk for patient who has ingested poison?
- What is your priority assessment?

# Implications of Lead Poisoning

- Life threatening
- More likely to drop out of school
- Become disabled
- Disturbed brain and nervous system function
- Prevent child from achieving full potential

# Body responses to elevated lead in the body:

- Neurotoxin (inhibits neurotransmitters)-irritability, headaches, mental retardation
- GI- nausea, vomiting, anorexia, colic, abdominal pain
- Musculoskeletal- weakness, arthralgia
- Teeth- degradation of calcium in teeth

Lead level of  $>10$  units is considered toxic


# Treatment of Lead Poisoning

- < 9 not lead poisoned
- 10-14: prescreen
- 15-19: nutritional and educational interventions
- 20-44: environmental eval and medication
- 45-69: chelation therapy
- >70: medical emergency

# Medications to Treat Lead Poisoning

- Medications: bind with the lead and increase the rate of excretion from the body
- Calcium disodium edentate (EDTA) administered IV
- Dimercaprol IM or D-Penicillamine succimer orally
- Force fluids assess I & O for renal function and adequate urinary output





What is the relationship of  
safety to childhood  
development?

# Contact

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