

Maximizing Potential: Making a Difference in the Life of Prenatally-Exposed Infants and Toddlers through Early Intervention Strategies

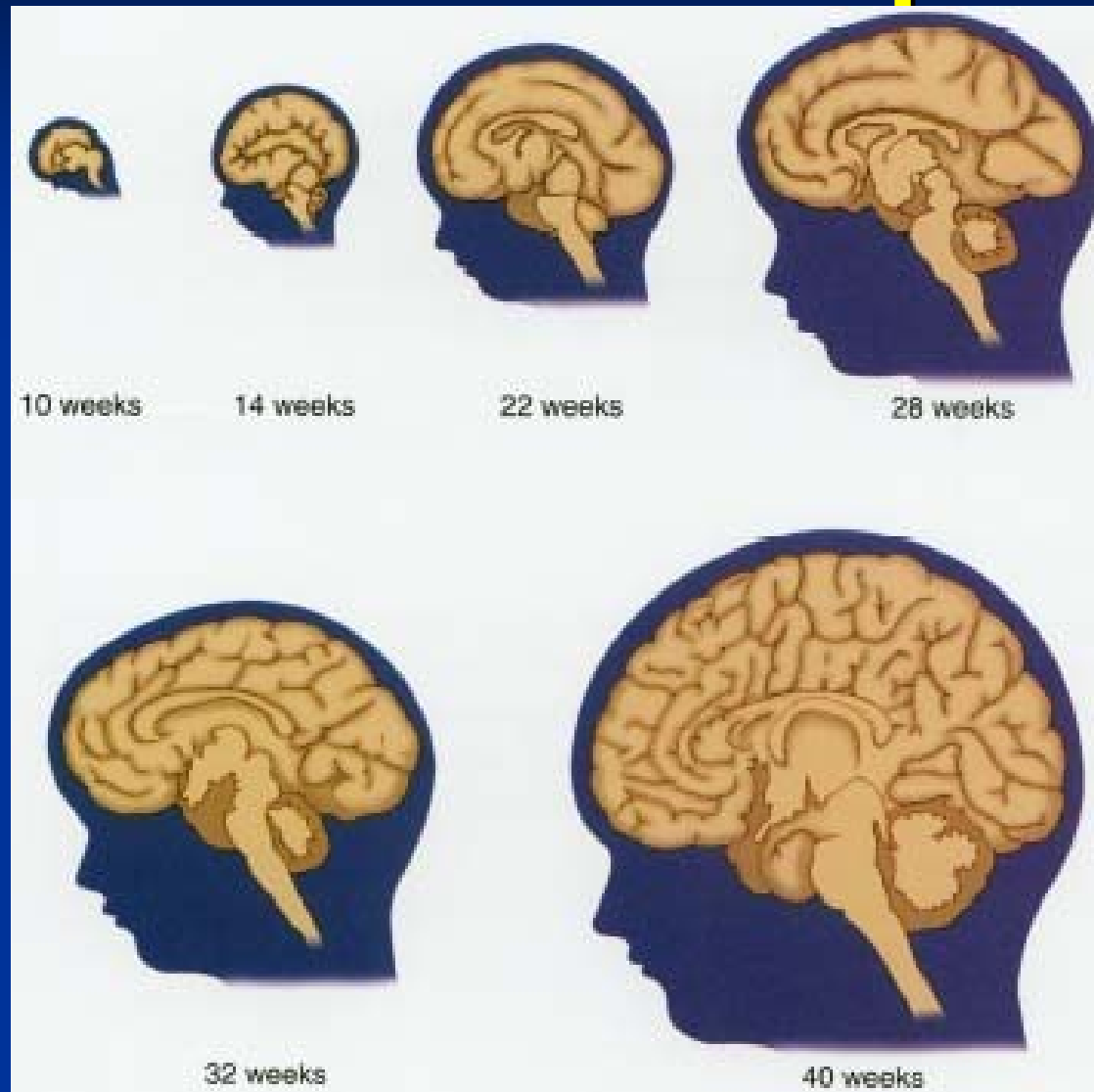
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Overview

- Neurodevelopmental impact of PSE on the very young child
- Developmental challenges and common diagnoses
- Strategies for interventions

Fetal Brain Development

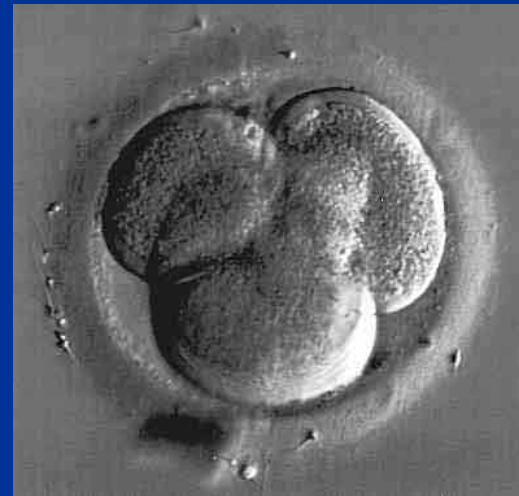


Prenatal Substance Exposure

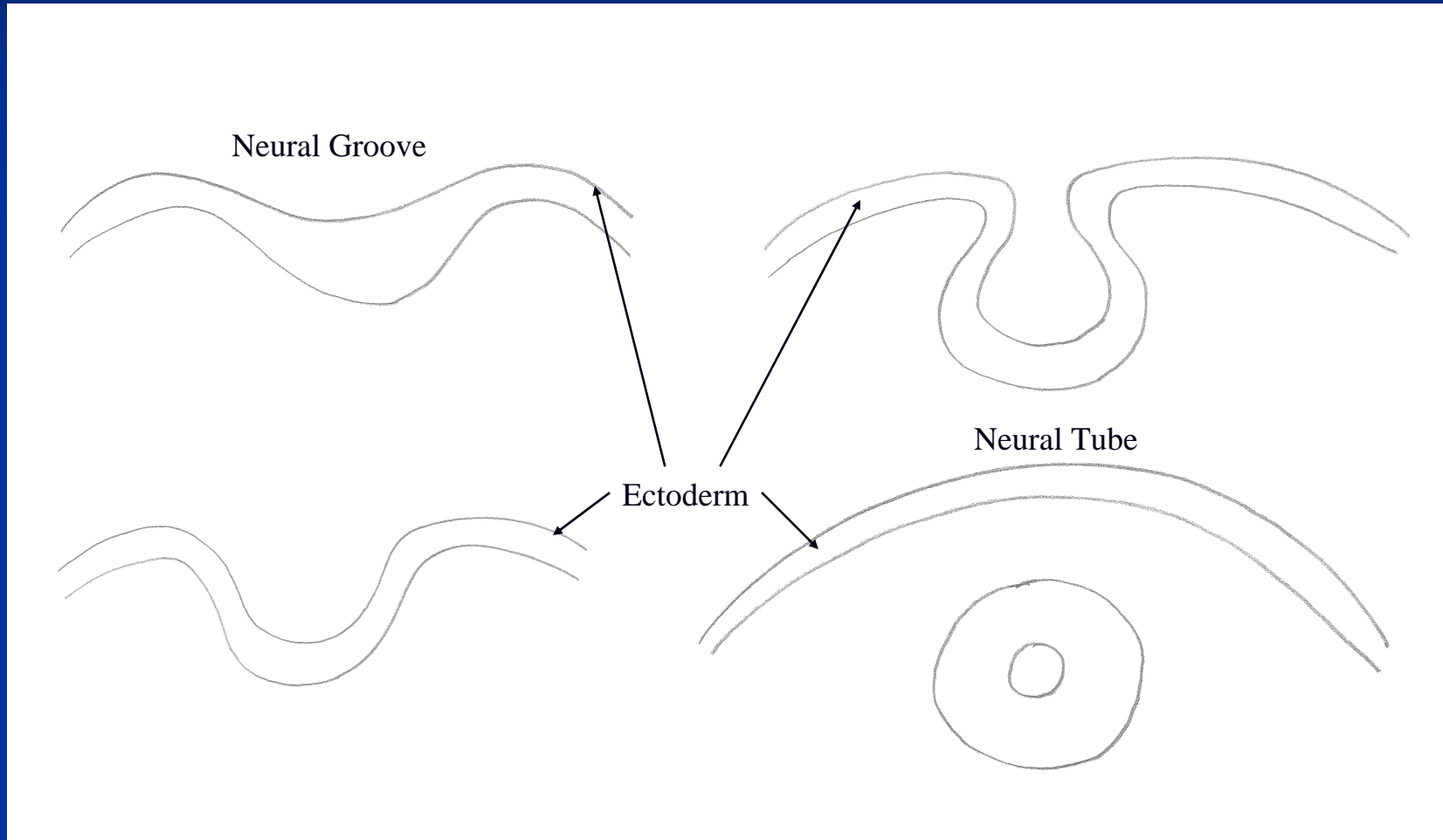
- Prenatal substance exposure can affect:
 - Gross anatomy of the brain
 - Formation of nerve cells
 - Connections between nerve cells (neurotransmitters)
 - Brain metabolism

The Fetal Brain

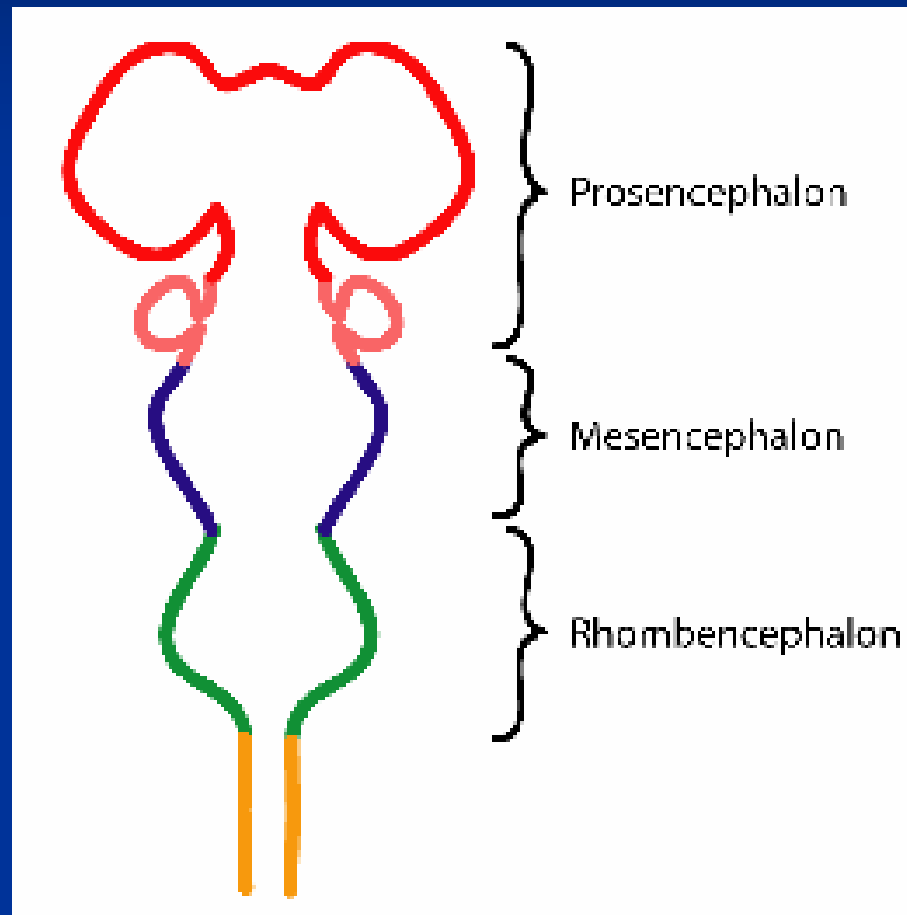
- Fetal brain development begins early in gestation



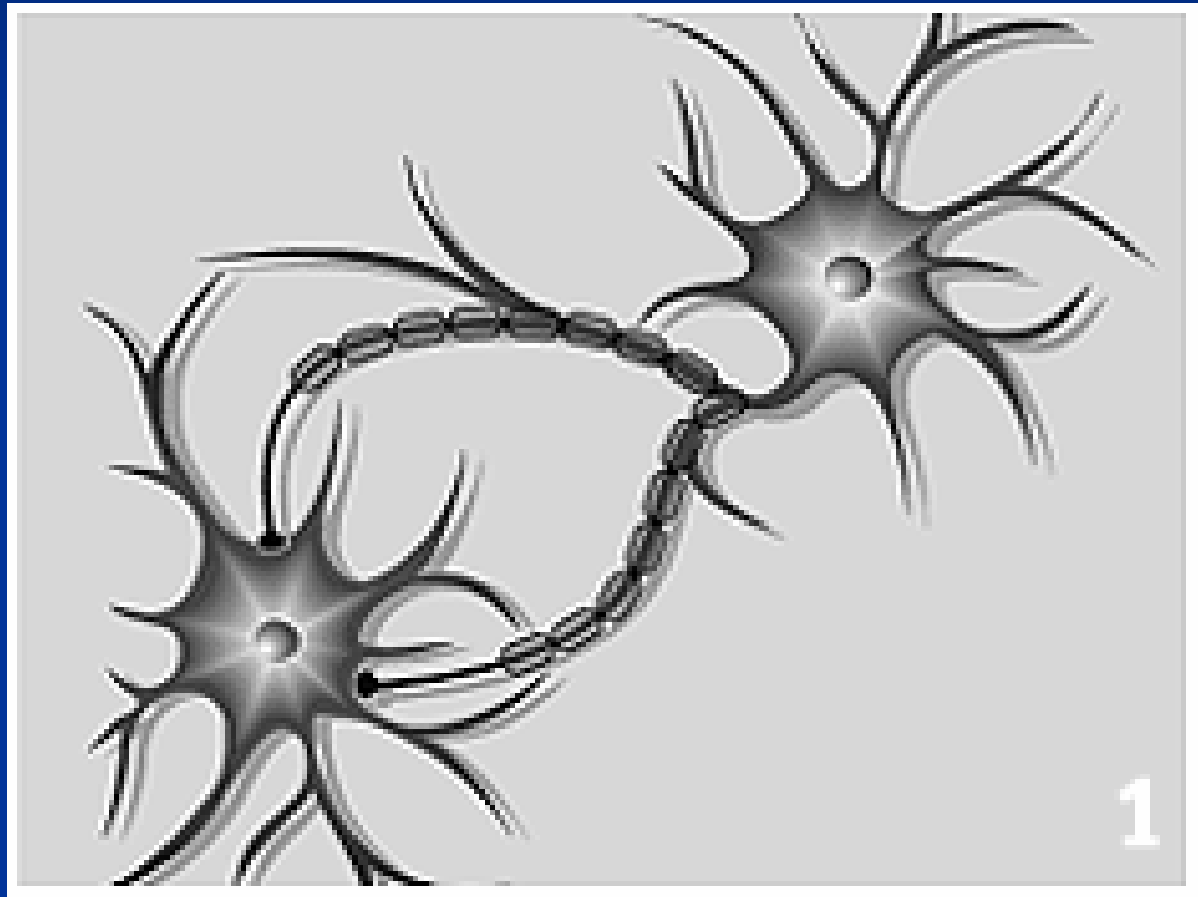
First Appearance of Neural Tissue



The First Hint of a Brain

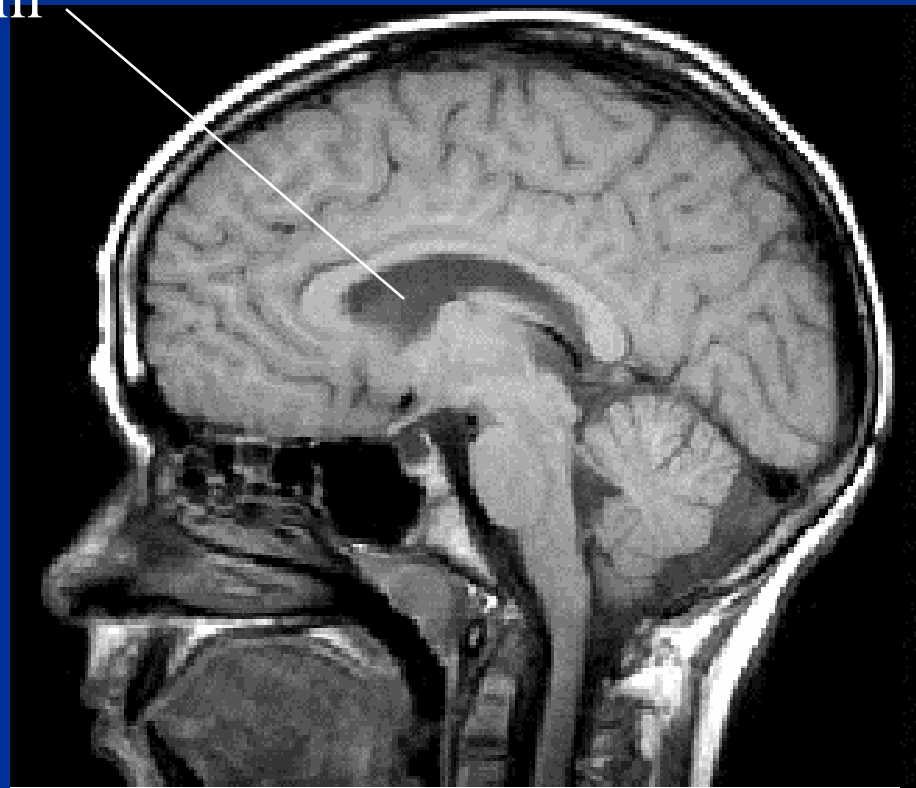


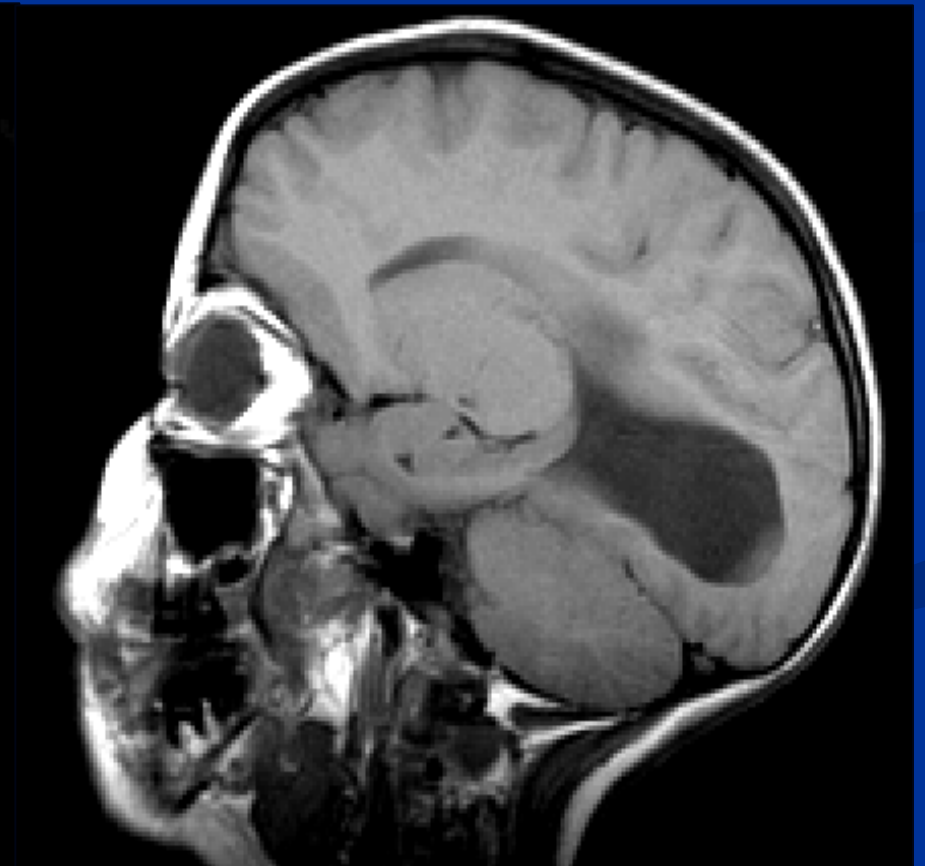
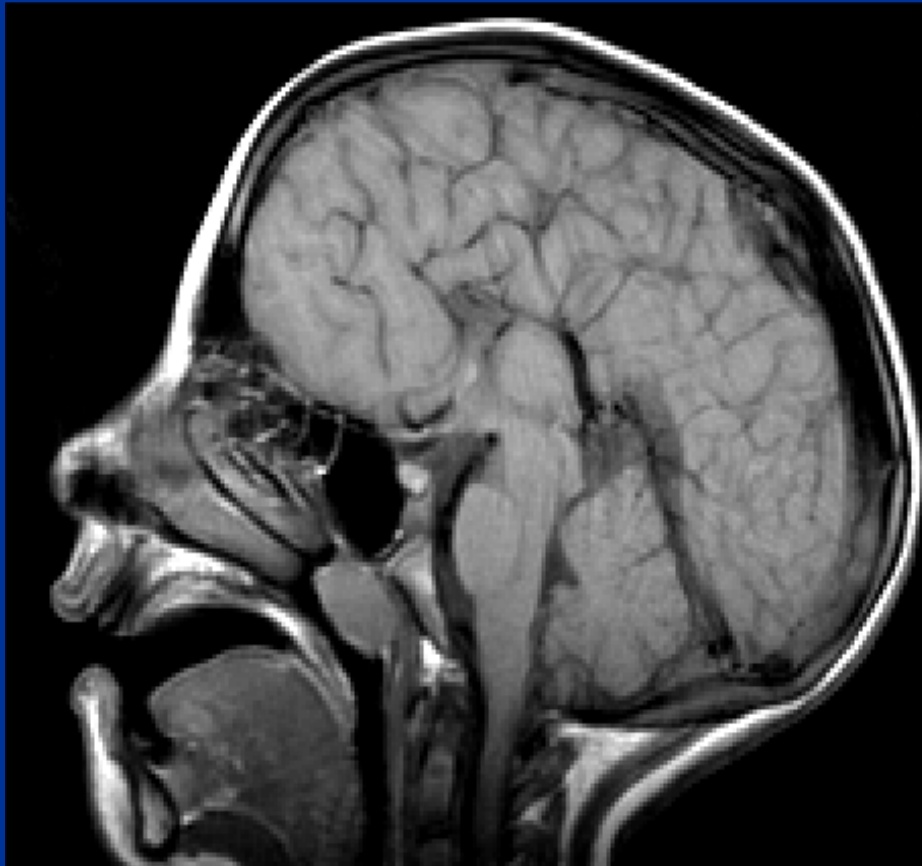
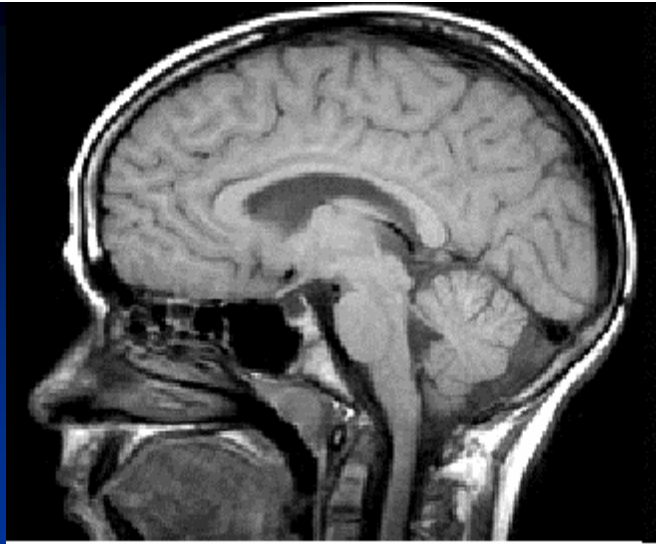
Brain Connections

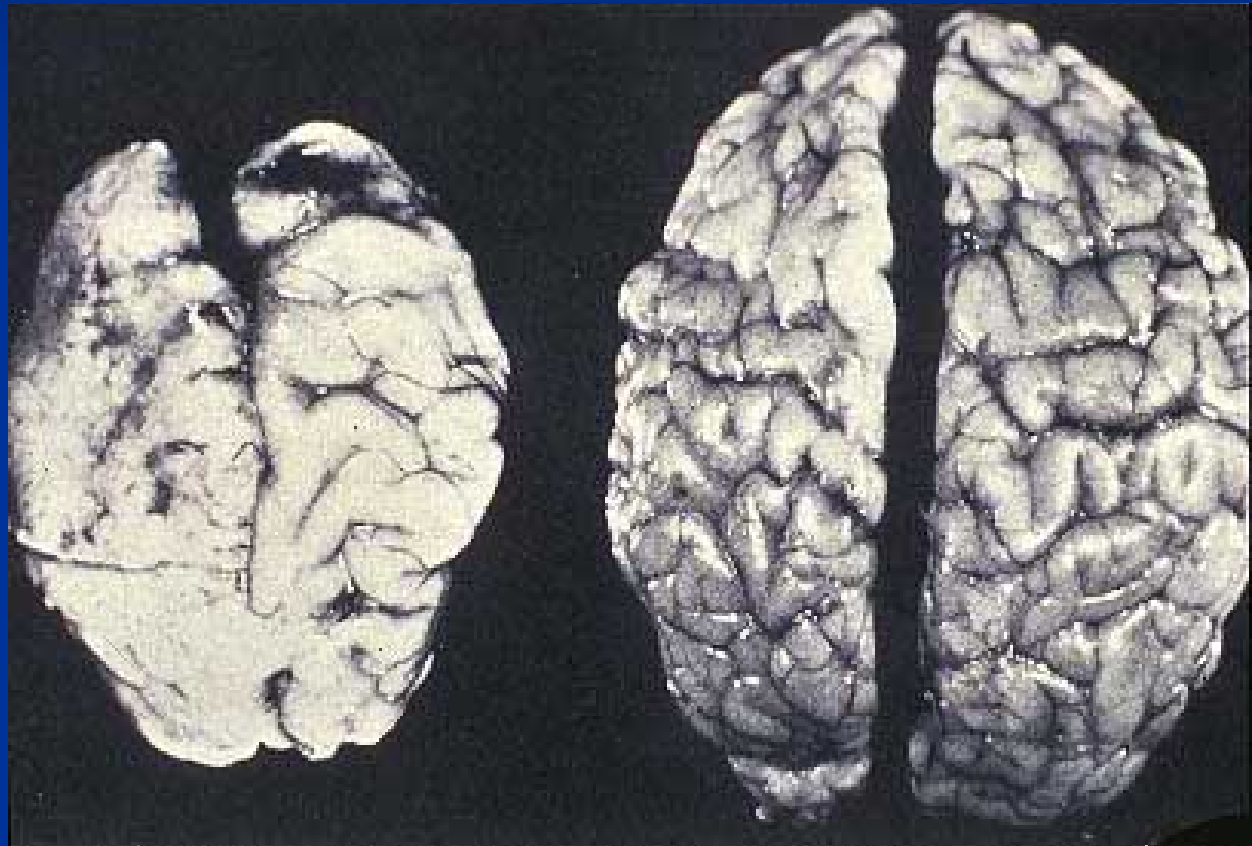


Brain Connections

Corpus Callosum

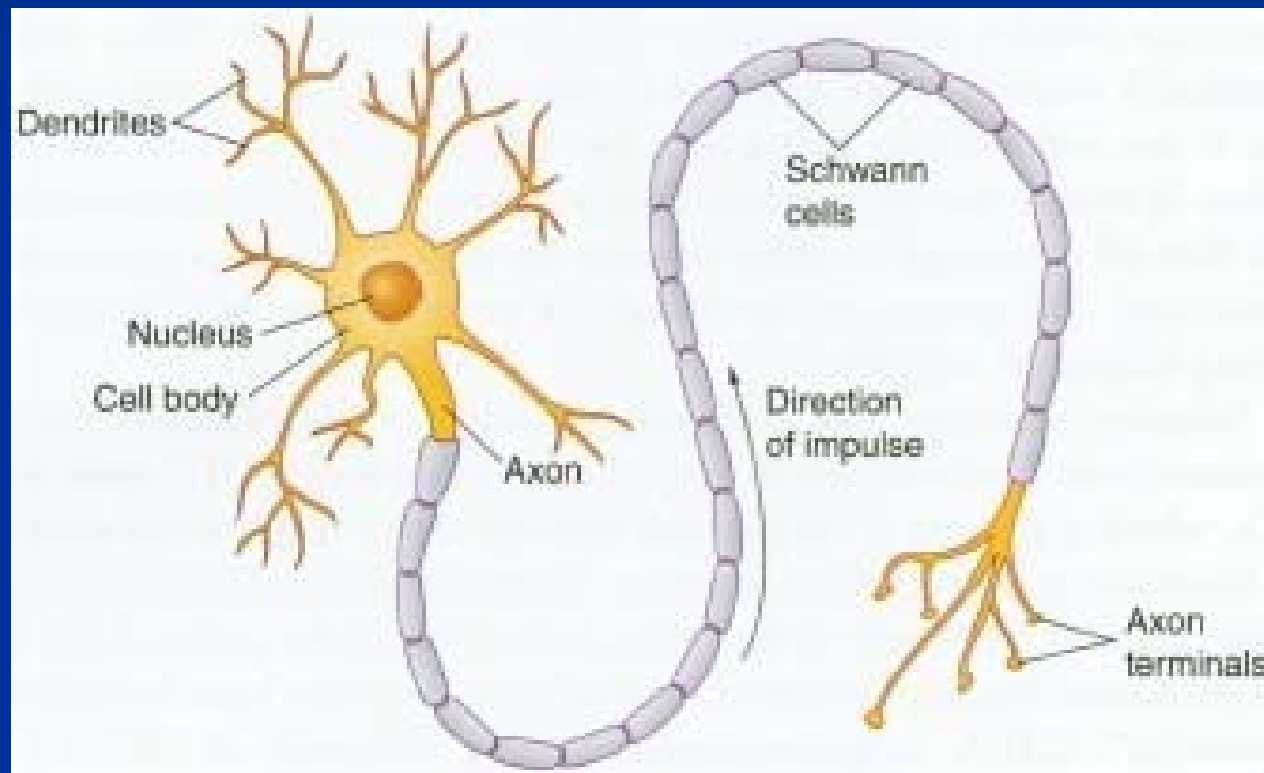






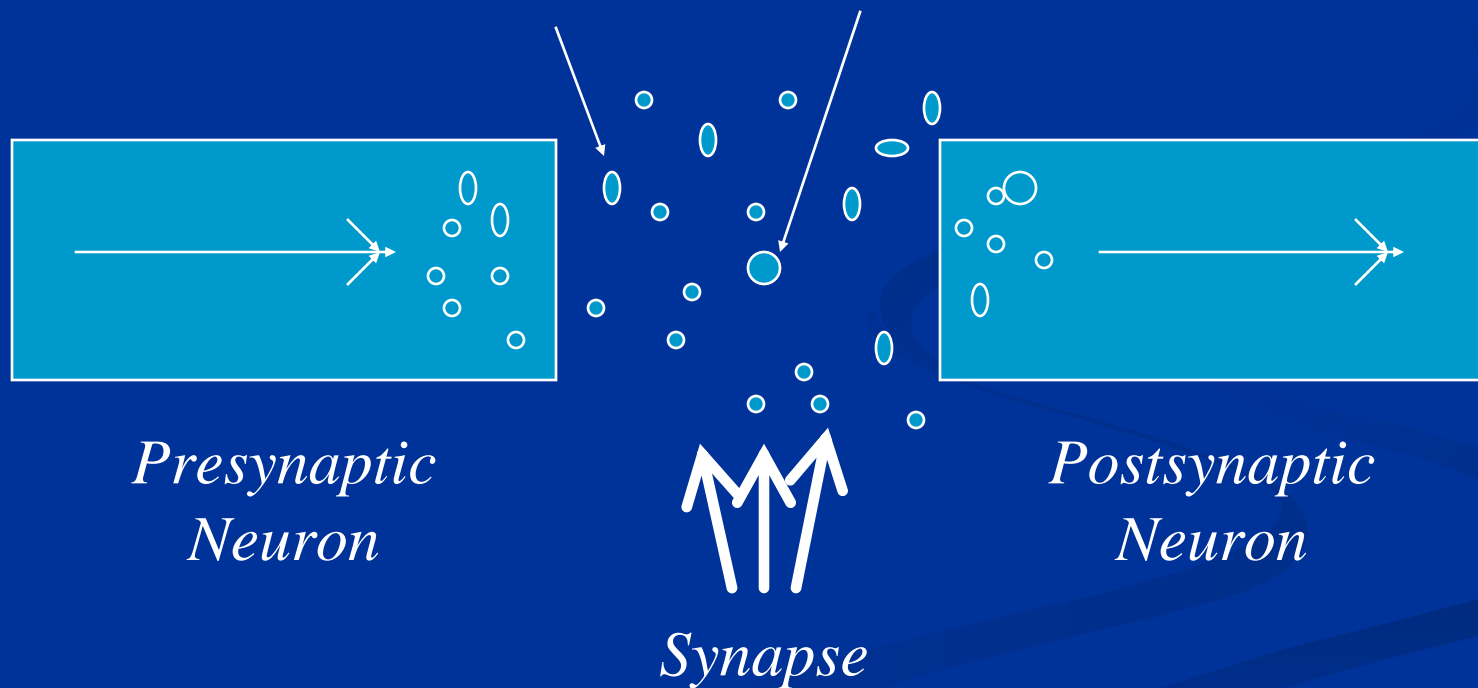
Children's Research Triangle © 2007

Neuron

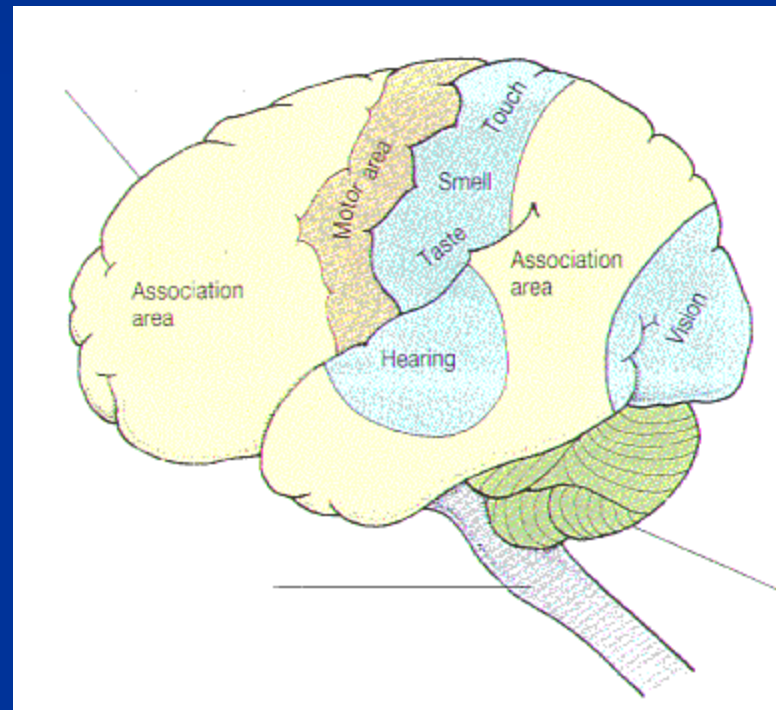


Neuron Communication

Neurotransmitters



The Brain



The Brain

- Prefrontal Cortex—cognition, executive functioning
- Hippocampus—memory
- Corpus callosum—integrating information
- Limbic system—emotions
- Basal ganglia—motor coordination

Timing of Insult to Brain Development

- Insults in the first 6 months tend to affect gross brain structure and the neurons and their connections in the brain
- Insults after the first 6 months tend to produce more subtle damage such as changes in myelination and continued connections between neurons

Overview: Primary Difficulties of Prenatally Exposed Infants and Toddlers

- Self-Regulation
- Sensory Processing Problems
- Cognitive Development
- Communication Development
- Motor Skills
- Attachment
- Behavior

Self-Regulation

The capacity to modulate mood, self-calm, delay gratification and tolerate transitions in activity

Impact of Regulatory Difficulties

- State Regulation
- Sleep States
- Habituation
- Reflex Development

- Self-soothing
- Attention
- Transition
- Modulation of Affect

Sensory Processing

The capacity of the central nervous system to integrate information from the various senses to enable the person to interact with the world

Sensory Processing Difficulties in the PSE Young Child

- An inability to process information received through the senses
- The brain cannot analyze, organize, connect or interpret sensory messages
- Child cannot respond to sensory information to behave in a meaningful, consistent way
- Sensations include touch, movement, body positions, sights, sounds, smells and tastes

The Impact of PSE on Cognitive Development

- Information Processing
- Memory
- Abstract Reasoning
- Concept Formation
- Visuospatial Processing

- Cause-Effect Thinking
- Organizational Capacity
- Social Information Processing
- Patterning
- Inconsistent Knowledge Base

The Impact of PSE on Communication Development

- Nonverbal Cues
- Language Production
- Representation Skills
- Labeling Ability
- Speech Articulation/Apraxia

The Impact of PSE on Motor Development

- Hypertonic/Hypotonic
- Fine Motor Delays
- Gait Deficits
- Motor Apraxia
- Cerebral Palsy

Attachment

The deep and enduring
affectional bond between a
child and his/her primary
caretaker

Functions of Attachment

- Allows child to develop a sense of trust, safety and security
- A secure base can mitigate future challenges, stressors
- Provides a foundation for subsequent intimate relationships

Behavioral Sequelae of PSE

- Activity Level
- Impulse Control
- Attention
- Frustration Tolerance
- Social Judgment

Behavioral Sequelae (con't)

- Inflexibility
- Disorganization
- Transitions
- Self-Esteem
- Aggression



Assessment Framework

- Developmental Framework
- Importance of Dyadic Relationship
- Ecological Model: Risk and Resiliency

Developmental Risk Factors

- Child Risk Factors
- Parental Risk Factors
- Social/Environmental Risk Factors
- Cumulative Risk

Protective Factors for Substance-Exposed Children

- Living in a stable, positive home environment
- Not experiencing several foster homes
- Not a victim/witness of violence
- Receiving needed services
- Early diagnosis

Assessment

- Medical evaluation
- Parent Interview
- Play/Clinical Observation
- Developmental/IQ Evaluation
- Adaptive Behavior Evaluation
- Executive Functioning Evaluation
- Language Evaluation
- Social/Emotional and Behavioral Evaluation
- Sensory Functioning Screening

Parent Interview

- Most essential component of the assessment
- Includes:
 - Parental concerns
 - Child's history
 - Daily routines
 - Feedings
 - Sleeping/nap schedules
 - School readiness/performance
 - Developmental milestones

Play Observation

- Looking for:
 - Organization
 - Ability to initiate by self or use of an adult
 - Ability to sustain play
 - Level of play (symbolic, parallel, etc.)
 - Verbalizations during play
 - Themes expressed

Developmental Assessments

- Bayley III Assessment of Infant Development
- Mullen Scales of Early Learning: AGS Edition
- Battelle II
- IDA
- Curriculum based: Carolina, HELP, etc.

Developmental Assessments

- Looking at global developmental abilities:
 - Cognitive
 - Adaptive/problem solving
 - Language (receptive and expressive)
 - Fine and gross motor

Developmental Quotients – not Intelligent Quotients

Pre-School Assessments

- **Cognitive functioning**
 - WPPSI III
 - DAS
 - Stanford Binet V
- **Executive functioning**
 - BRIEF-P
- **Adaptive behaviors**
 - Vineland
 - ABAS
- **School readiness**
 - Bracken Revised

Language Assessments

- REEL III
- Preschool Language Scale – 4th Edition
- Looking at:
 - Receptive language abilities
 - Expressive language abilities
 - Articulation abilities
 - Functions of speech and language

Social Emotional/Behavioral Assessments

- ITSEA
- Bayley III Adaptation of Greenspan's Social Emotional Functioning Scale
- CBCL for ages 1 ½ - 5 years
- FEAS (Functional Emotional Assessment Scale by Greenspan and Weider)

Sensory Functioning

- Infant Toddler Sensory Checklist
- Infant/Toddler Sensory Profile
 - 0-6 Months
 - 7-36 Months
- Short Sensory Profile

Other Measures

- CARS/GARS/ADOS –Autism screening and assessment
- PSI (short and long form)
- Connors, BASC
- K-Bit
- NEPSY

Relational Assessments

Videotaped Paradigms

- PCERA
- MIM
- Strange Situation

Medical Evaluation

Goals: differential diagnosis

- Down Syndrome
- Fragile X Syndrome
- Williams Syndrome
- Cornelia DeLange
- Lead poisoning
- Sequelae of prematurity
- Neurological functioning

Diagnostic Classification Systems

- DSM IV-TR
- DC 0-3 R Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood: Revised Edition
- ICDLD Diagnostic Manual of Infancy and Early Childhood

Typical Psychological Diagnoses

- Regulatory Disorder
- Sensory Integration Dysfunction
- Sleep Behavior Disorder
- Eating Behavior Disorder
- Relationship/Attachment Disorder

Psychological Diagnoses

- Disorders of Relating & Communicating/
PDD
- Motor Disorders
- Language Disorders
- Mental Retardation
- PTSD

Typical Referrals for Substance Exposed Children

- Early Intervention

Occupational Therapy

Speech/Language Therapy

Physical Therapy

Developmental Therapy

Sensory Integration Therapy

Audiology

Interventions

- Psychological Interventions
- Neurosensory Assessments
- Pediatric Sub-Specialists
- Therapeutic Day Care
- Respite Care

Infant Mental Health and Other Interventions

- Developmental Guidance
- Parent-Child Interaction Guidance
- Infant-Parent Psychotherapy
- Insight Oriented Therapy
- Theraplay©
- Behavior Management



Strategies for Developing Self-Regulation

- Swaddle
- Look for Cues that Child is Overwhelmed
- Remain Calm
- Develop Soothing Routines
- Decrease Stimulation

- Structure
- Predictability
- Consistent Limits
- Repetition
- Contingency
- Prepare for Transitions

Strategies for Supporting Modulation of Affect

- Calm Care-giving
- Label Emotional Experiences with Words
- Recognize Over-stimulation-- Intervene Early
- Recognize Body Patterns

Strategies for Addressing Sensory Processing Issues

- Adjust Environment
- Create Quiet Places
- Devise Sensory Diet

Facilitating Cognitive and Language Development

- Repetition
- Labeling
- Manipulatives
- Reading
- Discuss routines

- Look for Teachable Moments
- Break Information into Manageable Parts
- Have Child Repeat Directions
- Recognize Developmental Limits

Importance of Play

- Develops Early Symbolic Thinking Skills
- Builds Organizational Skills
- Increases Capacity for Reciprocal Interaction
- Provides Communication at Child's Level
- Offers Opportunity for Emotional Communication





CHILDREN'S RESEARCH TRIANGLE
The Child Study Center & Camp SOAR

<http://www.childstudy.org>