

# AACBIS

American Academy for the Certification  
of Brain Injury Specialists

CERTIFICATION EXAM PREPARATION COURSE  
**Chapter 6: Children and Adolescents  
with Brain Injuries**

# MODULE OBJECTIVES

- Recognize developmental issues for children and adolescents after brain injury.
- Understand the public special education laws for children and adolescents with brain injuries.
- Understand the practice of individualized educational planning for children and adolescents.

# INTRODUCTION

Children have 3 of the top 4 incidence rates for TBI:

- Ages 0-4: 1121 per 100,000 incidences
- Ages 15-19: 914 per 100,000 incidences
- Ages 5-9: 659 per 100,000 incidences



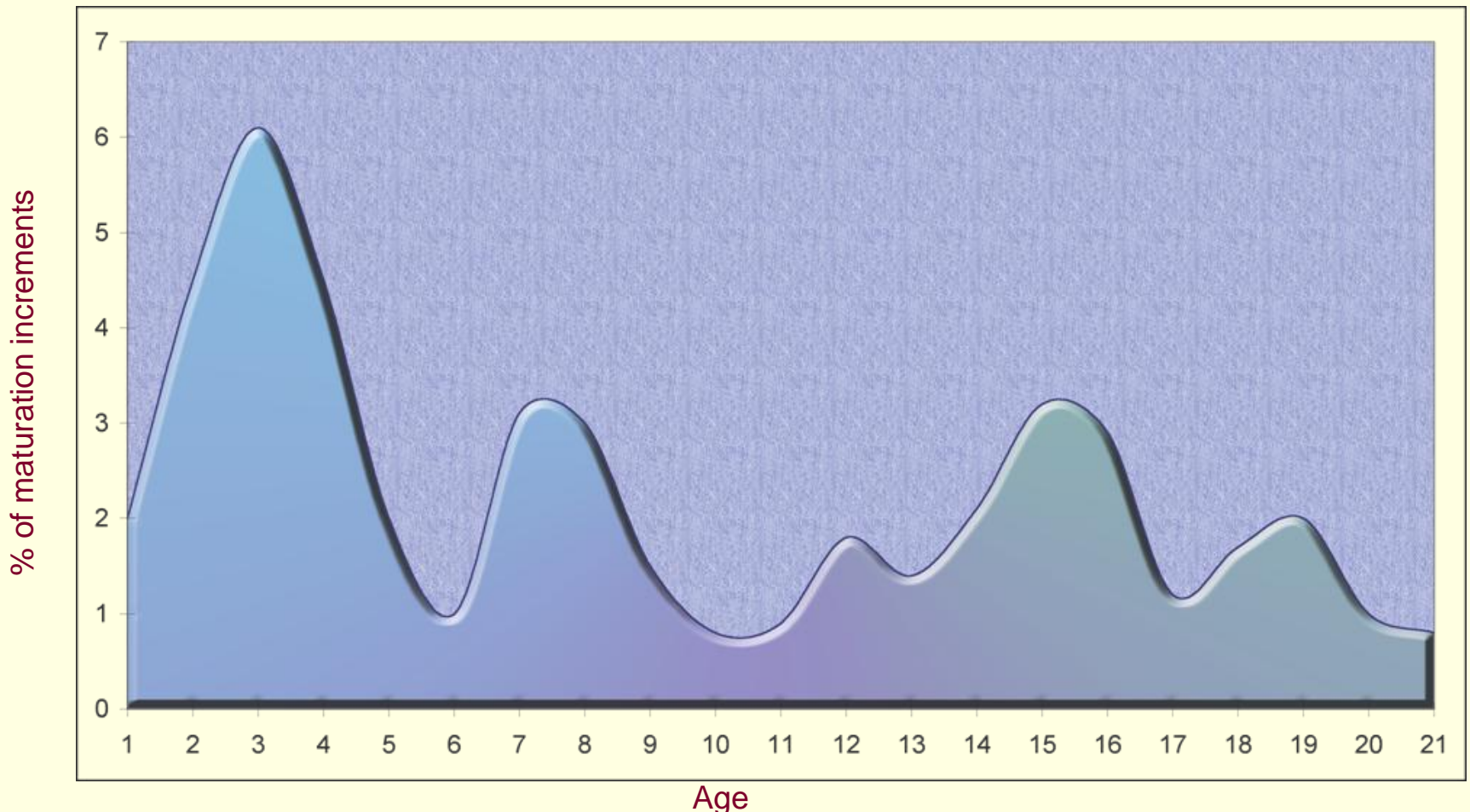
# INTRODUCTION



- Children are just as vulnerable to trauma as adults (children don't just “bounce back” after brain injury)
- Children may initially look well after trauma
- Effects of trauma may not be immediately apparent, as the child's brain is still developing
- As child gets older, that part of the brain previously damaged may not work as well as it should

# BRAIN MATURATION

Age and Percent Maturation



American Academy for the Certification of Brain Injury Specialists

# AGE EFFECTS

## Peak Maturation Mileposts

### ■ Ages 1-6

- **Period of overall rapid brain growth in all regions of the brain**
- **Perfecting ability to form images, use words, and place things in serial order**
- **Begin developing tactics for problem solving**



### ■ Ages 7-10

- **Sensory and motor systems continue to mature in tandem**
- **Frontal executive system begins accelerated development**
- **Maturation of sensory motor regions of the brain peak**
- **Begin to perform simple operational functions (e.g. determining weight and mathematical reasoning)**

# AGE EFFECTS

## ■ Ages 11-13

- Elaboration of visuospatial functions
- Maturation of visuoauditory regions
- Able to perform formal operations (e.g., calculations) and perceive new meaning in familiar objects



## ■ Ages 14-17

- Successive maturation of visuoauditory, visuospatial & somatic systems (maturational peak reached within one-year intervals of each other)
- Enter the stage of dialectic ability
- Able to review formal operations, recognize flaws, and create new ones



# AGE EFFECTS

- Ages 18-21
  - Rapid maturation of frontal executive region of the brain
  - Frontal executive functions mature
  - Begin to question information they are given, reconsider it, and form new hypotheses incorporating their own ideas



# BRAIN GROWTH

- The greatest percentage of brain maturation occurs from *birth through age 5*.
- *Before age 5* most devastating time for a child to sustain an injury.
- Infants and toddlers have severe brain trauma from being “shaken and impacted” have poor outcomes.
- Children with *frontal lobe* injuries early in life tend to develop long-term psychosocial and behavioral problems.

# COLLABORATING WITH MEDICAL AND REHABILITATION SYSTEMS

- Medical services are the *“beginning”* of the continuum of services to support long-term needs of children with BI.
- Important for local hospitals and schools to develop policies and procedures that promote effective communication and discharge planning.
- *Referral systems* that facilitate communication between hospitals, schools, and families increase chances of child receiving appropriate services.
- Children who are properly referred will be better managed, both medically and educationally.

# SCHOOL REINTEGRATION



- Students need to be carefully transitioned into schools with support plans already in place.
- Students may need to be reintegrated into school on a *part-time basis* or need homebound instruction for a period.
- *Families* are a natural link between hospital, home, and school.
- Families need the full support of professionals to plan for their child's successful reintegration to school.

# PERSISTING EFFECTS OF BRAIN INJURY

- Cognitive Effects
  - Memory
  - Attention and concentration
  - Higher level problem solving
  - Language skills
- Sensorimotor effects
- Behavioral effects



# QUALIFYING FOR SPECIAL SCHOOL SERVICES

- *Individuals with Disabilities Education Act* (IDEA)
- *Section 504* of the Rehabilitation Act of 1973



# INDIVIDUALS WITH DISABILITIES EDUCATION ACT (IDEA)

- Applies to those with an open or closed head injury (not *congenital*, degenerative, or induced by birth trauma) that results in one or more of the following impairments that adversely affects the child's *educational performance*:
  - Cognition
  - Language
  - Memory
  - Attention
  - Problem solving
  - Psychosocial functioning
  - Physical functions
  - Information processing
  - Speech
  - Sensory, perceptual and motor abilities

# SECTION 504 OF THE REHABILITATION ACT OF 1973

- Requires schools receiving federal funding to provide *reasonable accommodations* to allow an individual with a disability to participate.
- Students qualify for a 504 Plan if they have a “presumed disability”.
- The term disability means that an individual has a physical or mental impairment that *substantially limits* one or more major activities; has a record of the impairment; or is regarded as having an impairment.



# SECTION 504 OF THE REHABILITATION ACT OF 1973

- Examples of academic accommodations that may be written into a 504 Plan include, extended time on tests/assignments, note-takers for lectures, and preferential seating.
- In elementary/secondary schools, a 504 plan is generally reserved for students who do not require direct special education instruction or services and can participate in the general education setting if *accommodations* are provided.



# PREPARING FOR SCHOOL RE-ENTRY

- As soon as a student *is admitted to a health care facility*, the school reintegration and transition process should begin.
- Hospital and/or rehabilitation staff need to immediately inform the school that they are presently caring for one of their students.
- Family and/or attending physician should formally request that the school begin the evaluation process.
- With the referral for evaluation, school-based special educators or psychologists can then visit the student in the health care facility and begin the process to determine if the child will require special education services.

# SHARING INFORMATION WITH THE SCHOOL

Let the school staff know:

- When the child was injured
- How the child was injured
- When the child will return to school
- How the BI has affected the child
- How the child best learns
- What medications the child is taking
- What special equipment may be needed
- What environmental accommodations the child will need
- How long the child was in the hospital or rehab center



# HOSPITAL/REHABILITATION STAFF RESPONSIBILITIES

- Identify someone responsible for coordinating planning with the school
- Determine with the school if child needs to be referred for a special ed evaluation
- Meet with the child's teacher, school nurse, and special education director
- Visit the child's school and complete an environmental assessment
- Keep in contact with the school staff by phone for updates
- Conduct a brain injury inservice training for school staff
- Be available for follow-up planning and consultation

# THE INDIVIDUAL EDUCATION PLAN (IEP)

- A contract between the *student's family* and the *school system* designating the kinds and extent of services that the student needs
- A joint venture among the health care facility, the school, and the family
- A tool that describes what help the student will be given
- Identifies the skills, strategies, and behaviors that the student needs to learn and function at school
- Should be reviewed more frequently than the required 12 month period (e.g., every 2-4 months) with changes made as needed



# EXAMPLES OF TEACHING STRATEGIES

## ■ Attention/Concentration

- Reduce *distractions* in student's work area
- Divide work into small sections – have student complete one section at a time.

## ■ Memory

- Frequently repeat and summarize information
- Teach student to use devices such as sticky notes, calendars, and assignment books as *self-reminders* to compensate for memory problems



# EXAMPLES OF TEACHING STRATEGIES



## ■ Organization

- Provide student with additional time for review
- Provide written *checklists* of steps for complex tasks

## ■ Direction Following

- Ask student to repeat instructions back to teacher or a peer
- Underline or highlight significant parts of directions on written assignments

# WITHIN SCHOOL TRANSITIONS

Multiple transitions over the years – grade to grade, elementary to middle to high school, to graduation can be difficult at times for any student – particularly troublesome for students with BI.

- Recognize the need for *transition planning*
- Begin transition planning early
- Assess the new environment and determine needs
- Prepare the receiving teachers (e.g., BI in-service)
- Provide teachers with specific information about the student
- Involve ancillary personnel (medical, psychological, rehab)
- Continually *monitor progress*

# TRANSITION TO POST-SECONDARY EDUCATION

- If special education services were needed in high school, student is *likely* to need special assistance or accommodations at the post secondary level.
- PL 101-476 (IDEA) which provided funding for special education, *does not apply* to college. Individuals with BI can receive services under Section 504 of the Rehabilitation Act in post-secondary settings.
- Types of accommodations are determined by individual *institutions*.

# TRANSITION TO POST-SECONDARY EDUCATION

- Evaluating an institution's capacity to provide such services is critical.
- High school is responsible for helping the student choose an appropriate post-secondary setting if the student was injured prior to graduation
- For students first entering or returning to college after a BI, the hospital or rehab staff should provide assistance.



# TRANSITION TO WORK AND COMMUNITY

- Independent living centers, community-based advocacy agencies, and other support systems need to be involved in student's education program before graduation.
- Transition planning team must be aware of and informed about the range of available vocational services.
- Planning should include *vocational assessment* and *counseling* to help identify suitable occupations.
- Linkages with adult service providers (e.g., social security programs, independent living centers, residential service providers) must be established during *the high school years*.
- Some program have waiting lists – begin planning well in advance of the need for services.

# YOU CAN DO IT!



American Academy for the Certification of Brain Injury Specialists