

**TRAIN FOR SUCCESS INC.**  
**PEDIATRIC – GROWTH AND DEVELOPMENT 16Hr**

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# **TRAIN FOR SUCCESS INC.**

## **PEDIATRIC – GROWTH AND DEVELOPMENT 16Hr**

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### **PURPOSE**

The purpose of this course is to educate and reinforce the knowledge of Nurses; ARNP, RN, LPN, Therapists and CNA /HHA who are working in the health care environment, as well as other students/ individuals regarding caring for the pediatric population; this course reviews the physiological changes that occur; growth and development, factors to take into consideration when caring for the pediatric patient. Review some common Pediatric injuries such as drowning, poisoning, Burns, injuries from sports, falls and motor vehicle accidents. Review of various preventative and safety measures/ child injury prevention tips. Review of Pharmacology; the absorption, distribution, excretion and metabolism of medication variation through infancy, early childhood and puberty; and review of various ways in which Pediatricians, other health professionals, parents and caregivers can screen teens for risky behaviors.

### **Objectives/ Goals:**

After successful completion of this course the students will be able to:

1. Describe the Growth and Developmental changes that occurs
2. Discuss factors to take into consideration when caring for the pediatric patient
3. Discuss some common Pediatric injuries such as Poisoning, Burns, injuries from sports, fall, motor vehicle accidents, drowning.
4. Discuss various preventative and safety measures/ child injury prevention tips.
5. Discuss Pharmacology; the absorption, distribution, excretion and metabolism of medication variation through infancy, early childhood and puberty.
6. Describe some ways in which Pediatricians and other health professionals can screen teens for risky behaviors.

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### NEWBORN

Quickly after birth, all babies who are born in the United States are screened for specific medical conditions. This is referred to as newborn screening. All neonates are screened, even when they look healthy, because some medical conditions cannot be observed by just looking at the newborn.

The purpose of the screen is to find certain conditions soon after birth to help prevent some serious problems, for example:

- Organ damage,
- Brain damage, and
- even death.



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### **TEST FOR PHENYLKETONURIA (PKU)**

The test for phenylketonuria (PKU) assesses if the baby's body is able to process phenylalanine. Phenylalanine is found in many protein rich foods and some sweeteners and can build up in the blood and tissues of a baby with phenylketonuria (PKU), resulting in brain damage. This can be prevented if the baby with phenylketonuria (PKU) is started on a special diet early.

### **HYPOTHYROIDISM**

Babies are also checked for hypothyroidism. Hypothyroidism – indicates that their bodies do not make enough thyroid hormone. If the baby has hypothyroidism, this can be treated by administering medication with the hormone to avoid the slowed growth and brain damage that can happen if the hypothyroidism is not treated.

Some conditions cannot be treated as easily as phenylketonuria (PKU) and hypothyroidism, it is still helpful to be aware of the condition as soon as possible; such as a baby with sickle cell disease is at risk for harmful infections. These babies can take a daily dose of penicillin, an antibiotic medication, to help prevent infections. Although the penicillin will not change the fact that the baby has sickle cell disease, it can help prevent serious problems (CDC 2016).

### **SCREENING**

When babies that are born within the hospital, they should be screened before they are discharged from the hospital. Parents and caregivers need to take babies that were not delivered in the hospital or babies who were not screened before leaving the hospital, to a clinic or hospital to be checked within a few days of birth.

In some states all babies are screened a 2<sup>nd</sup> time, about 2 weeks after birth.

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### **THE TEST**

The health professional will perform a blood test by taking a few drops of blood from the baby's heel. The blood sample is sent to a screening lab for testing.

### **HEARING SCREENING**

Hearing screening is a short test to tell if the baby might have any hearing loss. Hearing screening is a very easy test and it is not painful. Babies are usually asleep while the test is being performed. All babies should be screened for hearing loss no later than 1 month of age. It is recommended that they are screened before being discharged from the hospital after birth.



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### **CRITICAL CONGENITAL HEART DEFECTS (CCHD)**

A baby who has a critical congenital heart defect (CCHD) is at significant risk of disability or death if the condition is not diagnosed quickly after birth. Newborn screening using pulse oximetry can identify some babies with a critical congenital heart defect (CCHD) before they show signs of the condition. As soon as identified, babies with a critical congenital heart defect (CCHD) can be seen by a cardiologist and can the babies can receive the special cardiac care and treatment that can prevent disability and death early in life.

Many hospitals routinely screen all newborns for critical congenital heart defect (CCHD). Unfortunately, critical congenital heart defect (CCHD) screening is not currently included in all state newborn screening panels.

### **CONDITIONS TESTED VARIES FOR EACH STATE**

Each state conducts its own newborn screening program. See the resource link for all screening requirement for each State.

The conditions tested include sickle cell disease and other hemoglobin disorders, conditions where the baby is not able to process specific nutrients; for example phenylketonuria (PKU), or conditions where there is a hormonal insufficiency for example, hypothyroidism.

Majority of the states screen for a standard number of conditions, but some states may screen / complete additional tests. This means that there are differences in the screening process and the number and types of conditions included in screening in each state (CDC 2016).

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### **RESULTS OF SCREENS**

If the results are in range / negative, then it means that the baby's test results did not reveal signs of any of the conditions included in the screening.

If the results are out of range /positive, then it means that the baby's test results indicate signs of one or more of the conditions included in the newborn testing/ screening.

However this does not always mean that the baby has the condition. Further testing will be needed at this point.

The pediatrician might recommend that the baby/ child repeat the screen or have more specific tests to diagnose a condition, such as babies who do not pass a hearing screening should have a full hearing test by 3 months and sometimes also at 6 months of age to confirm if there is a hearing loss.

### **TEACH PARENT AND CAREGIVERS**

It is very important to educate the parents and caregivers that if the baby's newborn screening tests show that there could be a problem, they will need to work with the healthcare team / pediatrician and make sure that all needed follow-up tests are completed as soon as possible as recommended, because finding and treating some of the conditions at an early age can prevent serious complications, for example organ damage, brain damage, and even death. Often times many of the conditions can be treated with medications or modifications to the baby's diet.



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### **CHILD GROWTH AND DEVELOPMENT**

As the children grow older, they will develop in several different ways. Child development includes:

- Physical changes,
- Intellectual changes,
- Social changes,
- Emotional changes.

Children will also grow and mature at different rates. There will be differences in weight, height and build among the children. Some factors that are involved include:

- Diet,
- Genes and
- Exercise.

Some children begin puberty or are close to puberty before they become teenagers.



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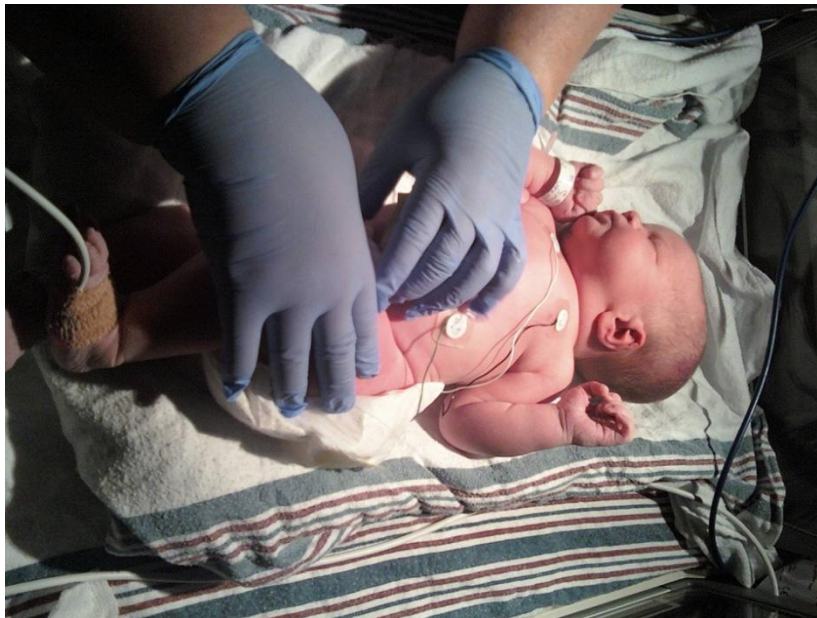
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A child's growth and development can be divided into 4 periods:

- Infancy
- Preschool years
- Middle childhood years
- Adolescence

Shortly after birth, infants normally lose about five percent to ten percent of their birth weight. However, by about 2 weeks old, the infant should start to gain weight and develop quickly.



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By age 4 - 6 months, the infant's weight should be double the birth weight and during the second half of the first year, growth is not as fast.



Between the ages of 1 – 2, a toddler may gain only about 5 pounds and weight gain may remain about 5 pounds per year between the ages of 2 - 5.

Between the ages of 2 - 10 years, a child should continue to grow at a steady pace. Then the final growth spurt begins at the beginning of puberty; which is sometime between the ages of 9 and 15.

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### NUTRIENT NEEDS



The nutrient/ nutritional needs of the children correspond with the changes in growth rates;

The infant needs more calories in relation to size than a preschooler or school-age child needs. Nutrient need increases again as the child grows closer to adolescence.

A healthy child will follow a growth curve, even though the nutrient intake may be different for every child.

Caregivers, parents and guardians need to provide a diet with a wide variety of foods/ nutritional intake that is suited to the children's age. Healthy eating habits needs to start during infancy.

This will help to prevent disorders or diseases for example;

- High blood pressure,

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- Type 2 diabetes,
- Obesity
- Problems with intellectual development.

### INTELLECTUAL DEVELOPMENT AND DIET

Poor nutrition can contribute to problems with the children's intellectual development. Children with poor nutritional intake may become tired and not able to learn while they are at school.

Poor nutritional intake may also cause the children to become more susceptible to illness and when they are ill they will miss days of school.



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Breakfast has been published as very important factor to start your day. This is also true for the children. The children who do not eat a good breakfast may feel fatigued, tired or lack energy or motivation to start the day or to participate in normal activities.

There are now government programs in place to ensure that each child has at least one healthy, nutritional /balanced meal each day. This meal is usually the breakfast, because the relationship between breakfast and improved learning has been clearly shown. Programs are available in underserved and poor areas within the United States of America.

### **Developmental milestones record for the 4 month old**

Typical 4-month-old infants are expected to develop certain physical and mental skills (milestones).

#### **PHYSICAL AND MOTOR SKILLS**

The typical 4-month-old baby should:

- Weigh 2 times more than their birth weight
- Have almost no head droop while in a sitting position
- Be able to sit straight if propped up
- Raise head 90 degrees when placed on stomach
- Be able to roll from front to back
- Hold and let go of an object

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- Play with a rattle when it is placed in their hands, but will not be able to pick it up if dropped
- Be able to grasp a rattle with both hands
- Be able to place objects in the mouth
- Sleep 9 to 10 hours at night with 2 naps during the day (total of 14 to 16 hours per day)

### **SENSORY AND COGNITIVE SKILLS**

A 4-month-old baby is expected to:

- Have well-established close vision
- Increase eye contact with parents and others
- Have beginning hand-eye coordination
- Be able to coo
- Be able to laugh out loud
- Anticipate feeding when able to see a bottle (if bottle-fed)
- Begin to show memory
- Demand attention by crying/ fussing
- Recognize parent's voice or touch

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### PLAY

Encourage development through play:

- Place the baby in front of a mirror.
- Provide bright-colored toys to hold.
- Repeat sounds the infant makes.
- Help the infant roll over.
- Play on the stomach



### Developmental milestones record - 9 months

At 9 months, a typical infant will have certain skills and reach growth markers (milestones).

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### **PHYSICAL CHARACTERISTICS AND MOTOR SKILLS**

A 9-month-old has usually reached the following milestones:

- Gains weight at a slower rate, about 15 grams (half an ounce) per day, 1 pound per month
- Increases in length by 1.5 centimeters (a little over one-half inch) per month
- Bowel and bladder become more regular
- Puts hands forward when the head is pointed to the ground (parachute reflex) to protect self from falling
- Is able to crawl
- Sits for long periods
- Pulls self to standing position
- Reaches for objects while sitting
- Bangs objects together
- Can grasp objects between the tip of the thumb and index finger
- Feeds self with fingers
- Throws or shakes objects



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### SENSORY AND COGNITIVE SKILLS

The 9-month-old typically:

- Babbles
- Has separation anxiety and may cling to parents
- Is developing depth perception
- Responds to simple commands
- Responds to name
- Understands the meaning of no
- Imitates speech sounds
- May be afraid of being left alone
- Plays interactive games, such as peek-a-boo and pat-a-cake
- Waves bye

### PLAY

To help the 9-month-old develop:

- Provide picture books.

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- Provide different stimuli by going to the mall to see people, or to the zoo to see animals.
- Build vocabulary by reading and naming people and objects in the environment.
- Teach hot and cold through play.
- Provide large toys that can be pushed to encourage walking.
- Sing songs together.
- Avoid television time until age 2.
- Try using a transition object to help decrease separation anxiety.

### **Developmental milestones record - 12 months**

The typical 12-month-old child will demonstrate certain physical and mental skills (developmental milestones).

#### **PHYSICAL AND MOTOR SKILLS**

A 12-month-old child is expected to:

- Be 3 times their birth weight
- Grow to a height of 50% over birth length
- Have a head circumference equal to that of their chest
- Have 1 to 8 teeth
- Stand without holding on to anything
- Walk alone or when holding 1 hand

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- Sit down without help
- Bang 2 blocks together
- Turn through the pages of a book by flipping many pages at a time
- Pick up a small object using the tip of their thumb and index finger
- Sleep 8 to 10 hours a night and take 1 to 2 naps during the day.

### **SENSORY AND COGNITIVE DEVELOPMENT**

The typical 12-month-old:

- Begins pretend play (such as pretending to drink from a cup)
- Follows a fast moving object
- Responds to their name
- Can say momma, papa, and at least 1 or 2 other words
- Understands simple commands
- Tries to imitate animal sounds
- Connects names with objects
- Understands that objects continue to exist, even when they cannot be seen
- Participates in getting dressed (raises arms)
- Plays simple back and forth games (ball game)
- Points to objects with the index finger

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- Waves bye
- May develop attachment to a toy or object
- Experiences separation anxiety and may cling to mom and/or dad
- May make brief journeys away from parents to explore in familiar settings.

### PLAY

You can help the 12-month-old develop skills through play such as:

- Provide picture books.
- Provide different stimuli, such as going to the mall or zoo.
- Play ball.
- Build vocabulary by reading and naming people and objects in the environment.
- Teach hot and cold through play.
- Provide large toys that can be pushed to encourage walking.
- Sing songs.
- Have a play date with a child of a similar age.
- Avoid television and other screen time until age 2.
- Try using a transitional object to help with separation anxiety.

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### **DEVELOPMENTAL MILESTONES RECORD - 18 MONTHS**

The typical 18-month-old child will demonstrate certain physical and mental skills/developmental milestones.

#### **PHYSICAL AND MOTOR SKILL MARKERS**

The typical 18-month-old:

- Has a closed soft spot on the front of the head
- Is growing at a slower rate and has less of an appetite compared to the months before
- Is able to control the muscles used to urinate and have bowel movements, but may not be ready to use the toilet
- Runs stiffly and falls often
- Is able to get onto small chairs without help
- Walks up stairs while holding on with 1 hand
- Can build a tower of 2 to 4 blocks
- Can use a spoon and cup with help to feed self
- Imitates scribbling
- Can turn 2 or 3 pages of a book at a time.

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### **SENSORY AND COGNITIVE MARKERS**

The typical 18-month-old:

- Shows affection
- Has separation anxiety
- Listens to a story or looks at pictures
- Can say 10 or more words when asked
- Kisses parents with lips puckered
- Identifies 1 or more parts of the body
- Understands and is able to point to and identify common objects
- Often imitates
- Is able to take off some clothing items, such as gloves, hats, and socks
- Begins to feel a sense of ownership, identifying people and objects by saying – MY.

### **PLAY**

- Encourage and provide the necessary space for physical activity.
- Provide safe copies of adult tools and equipment for the child to play with.

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- Allow the child to help around the house and participate in the family's daily responsibilities.
- Encourage play that involves building and creativity.
- Read story/ books to the child.
- Encourage play dates with children of the same age.
- Avoid television and other screen time before age 2.
- Play simple games together, such as puzzles and shape sorting.
- Use a transitional object to help with separation anxiety.

### **Developmental milestones record - 2 years**

Physical and motor skill markers:

- Able to turn a door knob
- Can look through a book turning one page at a time
- Can build a tower of 6 to 7 cubes
- Can kick a ball without losing balance
- Can pick up objects while standing, without losing balance (This often occurs by 15 months. It is a cause for concern if not seen by 2 years).
- Can run with better coordination (May still have a wide stance).
- May be ready for toilet training
- Should have the first 16 teeth (The actual number of teeth can vary widely).
- At 24 months, will reach about half final adult height

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### **SENSORY AND COGNITIVE MARKERS:**

- Able to put on simple clothing without help (often better able to remove clothing than putting them on)
- Able to communicate needs such as thirst, hunger, need to go to the bathroom
- Can organize phrases of 2 - 3 words
- Can understand 2-step command
- Has increased attention span
- Vision is fully developed
- Vocabulary has increased to about 50 - 300 words (Healthy children's vocabulary can vary widely.)

### **Play recommendations:**

- Allow the child to help around the house and take part in the daily family chores.
- Encourage active play and provide enough space for healthy physical activity.
- Encourage play that involves building and creativity.
- Provide safe copies of adult tools and equipment. Many children like to mimic activities such as cutting the grass or sweeping the floor.
- Read books to the child.
- Television: control both the content and quantity of television viewing. Limit screen time to less than 3 hours per day. One hour or less is better. Avoid programming with violent content. Redirect the children to reading or play



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activities.

- Control the type of games the child plays.

### **DEVELOPMENTAL MILESTONES RECORD - 3 YEARS**

Skills and growth markers that are relevant to 3-year-olds.

Physical and motor milestones for a typical 3-year-old include:

- Gains about 4 - 5 pounds
- Grows about 2 - 3 inches
- Reaches about half of his or her adult height
- Has improved balance
- Has improved vision (20/30)
- Has all 20 primary teeth
- Needs 11 - 13 hours of sleep a day
- May have daytime control over bowel and bladder functions (may have nighttime control as well)
- Can briefly balance and hop on one foot
- May walk up stairs with alternating feet (without holding the rail)
- Can build a block tower of more than nine cubes
- Can easily place small objects in a small opening
- Can copy a circle

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- Can pedal a tricycle.

These milestones are typical for children in their 3<sup>rd</sup> year of life. Always remember that some differences are normal. Teach parents and caregivers that if they have questions about their child's development, they need to contact the child's health care provider.

### **Sensory, mental, and social milestones include:**

- Has a vocabulary of several hundred words
- Speaks in sentences of three words
- Counts three objects
- Uses plurals and pronouns (he/she)
- Often asks questions
- Can dress self, only needing help with shoelace, buttons, and other fasteners in difficult/ awkward places
- Can stay focused for a longer period of time
- Has a longer attention span
- Feeds self easily
- Acts out social encounters through play activities
- Becomes less afraid when separated from mother or caregiver for short periods of time
- Fears imaginary things
- Knows own name, age, and gender (boy/girl)

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- Starts to share
- Has some cooperative play (building tower of blocks together).

At age 3, almost all of a child's speech should be understandable.

### **ALERT !!**

Temper tantrums are common at this age however, children who have tantrums that often last for more than 15 minutes or that occur more than three times a day should be seen by a health care provider.

Ways to encourage a 3-year-old's development include:

- Provide a safe play area and constant supervision.
- Provide the necessary space for physical activity.
- Help the child take part in -- and learn the rules of -- sports and games.
- Limit both the time and content of television and computer viewing.
- Visit local areas of interest.
- Encourage the child to help with small household chores, such as helping set the table or picking up toys.
- Encourage play with other children to help develop social skills.
- Encourage creative play.
- Read together.

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- Encourage the child to learn by answering his or her questions.
- Provide activities related to the child's interests.
- Encourage the child to use words to express feelings (instead of acting out).

### **Developmental milestones record - 4 years**

The typical 4-year-old child will demonstrate certain physical and mental skills/developmental milestones.

#### **PHYSICAL AND MOTOR**

During the 4<sup>th</sup> year, a child typically:

- Gains weight at the rate of about 6 grams (less than one quarter of an ounce) per day
- Weighs 40 pounds (18.14 kilograms) and is 40 inches tall
- Has 20/20 vision
- Sleeps 11 to 13 hours at night, usually without a daytime nap
- Grows to a height that is double the birth length
- Shows improved balance
- Hops on 1 foot without losing balance
- Throws a ball overhand with coordination
- Can cut out a picture using scissors

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- May still wet the bed.

### **SENSORY AND COGNITIVE**

The typical 4-year-old:

- Has a vocabulary of more than 1,000 words
- Easily puts together sentences of 4 or 5 words
- Can use the past tense
- Can count to 4
- Will be curious and ask a lot of questions
- May use words they do not fully understand
- May begin using vulgar words
- Learns and sings simple songs
- Tries to be very independent
- May show increased aggressive behavior
- Talks about personal family matters to others
- Commonly has imaginary playmates
- Has an increased understanding of time
- Is able to tell the difference between 2 objects based on things like size and weight

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- Rebels if too much is expected of them

### **PLAY**

The parents of a 4-year-old should:

- Encourage and provide space for physical activity.
- Show the child how to participate in and follow the rules of sporting activities.
- Encourage play and sharing with other children.
- Encourage creative play.
- Teach the child to do small chores
- Read books together.
- Limit screen time (television and other media) to 2 hours a day of quality programs.
- Expose the child to different stimuli by visiting local areas of interest.

### **Developmental milestones record - 5 years**

Expected skills and growth markers of most 5-year-old children.

Physical and motor skill milestones for a typical 5-year-old child include:

- Gains about 4 - 5 pounds
- Grows about 2 - 3 inches

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- Vision reaches 20/20
- First adult teeth start breaking through the gum (most children do not get their first adult teeth until age 6)
- Has better coordination (getting the arms, legs, and body to work together)
- Skips, jumps, and hops with good balance
- Stays balanced while standing on one foot with eyes closed
- Shows more skill with simple tools and writing utensils
- Can copy a triangle
- Can use a knife to spread soft foods.

### **SENSORY AND MENTAL MILESTONES:**

- Has a vocabulary of more than 2,000 words
- Speaks in sentences of 5 or more words, and with all parts of speech
- Can identify different coins
- Can count to 10
- Knows telephone number
- Can properly name the primary colors, and possibly many more colors
- Asks deeper questions that address meaning and purpose
- Can answer - why - questions
- Outgrows earlier childhood fears

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- Accepts other points of view however may not understand them
- Has improved math skills
- Questions others, including parents
- Strongly identifies with the parent of the same sex
- Has a group of friends
- Likes to imagine and pretend while playing.

Ways to encourage a 5-year-old's development include:

- Reading together
- Providing enough space for the child to be active
- Teaching the child how to take part in sports and games and learn the rules
- Encouraging the child to play with other children, which helps develop social skills
- Playing creatively with the child
- Limiting both the time and content of television and computer viewing
- Visiting local areas of interest
- Encouraging the child to perform small household chores, such as helping set the table or picking up toys after play.



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### **PRESCHOOLER DEVELOPMENT**

The normal social and physical development of children ages 3 to 6 years old includes many milestones.

#### **PHYSICAL DEVELOPMENT**

The typical 3- to 6-year-old as mentioned earlier includes physical development such as:

- Gains about four to five pounds per year
- Grows two to three inches per year
- Has all twenty primary teeth by age 3
- Has 20/20 vision by age 4
- Sleeps eleven to thirteen hours at night (often without nap during day).

#### **Gross motor development in the 3- to 6-year-old should include:**

- Develop more skills such as jumping, running, kicking and throwing ball
- Catching a bouncing ball,
- Pedaling a tricycle (at age 3); able to steer well at around 4 years old,
- Hopping on 1 foot (around 4 years old), and then eventually balancing on one foot for up to 5 seconds,
- Doing a heel-to-toe walk (around 5 years old).

#### **Fine motor development milestones at about age 3 should include:**

- Able to draw a circle
- Able to draw a person with 3 parts
- Start to use children's blunt tip scissor
- Dressing self with supervision.

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### **Fine motor development milestones at about 4 years old should include:**

Drawing a square  
Using a pair of scissor and eventually cut a straight line  
Dressing self/ putting on clothing properly  
Using a spoon and fork (neatly) while eating.

### **Fine motor development milestones at about age 5 should include:**

Able to draw a triangle  
Able to spread with a knife

### **LANGUAGE DEVELOPMENT**

The 3-year-old uses:  
Pronouns appropriately  
Prepositions appropriately  
sentences with 3 words  
Pluralize words

The 4-year-old begins to:  
Understand size relationships  
Follows 3-step commands  
Able to count to 4  
Able to name 4 or more colors  
Enjoys rhymes  
Enjoys word play

The 5-year-old:  
Shows early understanding of time concepts  
Able to count to 10  
Knows his/her telephone number  
Able to respond when asked "why" types of questions.

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Stuttering may occur in the normal language development of toddlers about ages 3 to 4 years. It may occur when ideas come to the mind faster than the child is able to express them, especially when the child is very excited or stressed.

Educate parents and caregivers to avoid / not to comment on the stuttering. Consider having the child evaluated by a speech pathologist. An appointment should be scheduled with the speech pathologist when;

- there are other signs with the stuttering, such as tics, grimacing, or extreme self-consciousness
- the stuttering lasts longer than 6 months.

## **BEHAVIOR**

The preschoolers learn the social skills that they need to play with other children and also to work together. Eventually, the children become more capable of working with a larger group of peers. The 4 to 5 year old children become capable of playing games with rules; however, the rules are likely to change throughout the game.

It is often common to see a dominant child evolve in a small group of preschool children and the dominant child, will take the lead without the other children opposing.

It is normal for the preschooler to test his/her physical, emotional and behavioral limits. It is important for them to have a safe, structured environment in which they can develop, explore and face new situations and challenges. It is also very important to set well-defined limits for the

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preschooler. The preschooler should demonstrate initiative, enjoyment, curiosity, and a desire to explore without feeling guilty or inhibited.

### **SCHOOL-AGE CHILDREN DEVELOPMENT**

School-age child development defines the expected physical, mental and emotional abilities of children ranging from ages 6 to 12.



### **PHYSICAL DEVELOPMENT**

School-age children usually have strong smooth motor skills. It is noted however, that their eye - hand coordination, endurance, physical ability and endurance may vary.

it is also noted that their fine motor skills can also vary. These skills affect the children's ability to demonstrate neat handwriting and perform some chores, for example; making their beds or dressing themselves appropriately.

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There are also differences in weight, height and body structure. Remember that there are several factors that will affect the child's growth such as:

- Genetic background,
- Nutrition
- Exercise/ activities
- Lack of exercise /sedentary lifestyle.

Sedentary lifestyle in the school-age child is linked to the risk for heart disease in adults and obesity.

It is recommended that a child in this age group should have one hour of physical activity each day.

### **SECONDARY SEXUAL CHARACTERISTICS**

There are also noted differences in the age at which the children begin to develop secondary sexual characteristics.

For the girls, secondary sex characteristics include:

- Breast development
- Underarm hair growth
- Pubic hair growth

For boys, secondary sex characteristics include:

- Growth of underarm hair
- Growth of chest hair

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- Growth of pubic hair
- Growth of testicles
- Growth of penis

## SCHOOL

By age 5, most children are ready to start learning in a school setting. The first few years focus on learning the fundamentals. In 3rd grade, the focus becomes more complex. Reading becomes more about the content than identifying letters and words.



An ability to pay attention is important for success both at school and at home. By 6 years old, the child should have the ability to focus on a task for at least fifteen minutes. By 9 years old, the child should be able to focus attention for about 1 hour.

The ability to pay attention is so important for the child to learn and to succeed. At this time, the children will also need to learn how to deal with failures or frustration without losing their self-esteem.

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There are many factors that may lead to school failure, such as:

- Learning disabilities such as: reading disability
- Stressors such as: bullying
- Hearing difficulties
- Mental health issues, such as anxiety or depression.

Educate parents and caregivers that if they suspect any of these in the children, they should speak with the child's teacher and/ or health care provider.



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### **LANGUAGE DEVELOPMENT**

Early school-age children should have the ability to use simple, however complete, sentences that contain an average of 5 to 7 words.

As the child goes through the elementary school years, grammar and pronunciation become normal. The child will use more complex sentences as he /she grows.

Language delays may be caused by hearing difficulties or intelligence problems. It is also noted that children who are unable to express themselves effectively may be more likely to display aggressive behavior or have temper tantrums.





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### PUBERTY

Puberty is the period of time when the body begins to develop and change as you move from child to adult. At this time there are various changes in the body and the boy and girl becomes sexually mature.

Puberty is a process that usually happens between ages 10 and 14 for girls and ages 12 and 16 for boys. It causes physical changes, and affects boys and girls differently.

#### **In girls:**

The first sign of puberty is usually breast development.

Then hair grows in the pubic area and armpits.

Menstruation or a period, usually happens last.

#### **In boys:**

Puberty usually begins with the testicles and penis growing larger.

Then hair grows in the pubic area and armpits.

Muscles grow,

the voice deepens, and

facial hair develops as puberty continues.

Both boys and girls may have acne.

There is usually also a growth spurt; a rapid increase in the height, that lasts for about 2 or 3 years. This brings them closer to their adult height, which they reach after puberty.

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### **TEENAGERS**

The teenager go through many physical, mental, emotional, and social changes. The biggest change is puberty, the process of becoming sexually mature. As mentioned earlier, this usually happens between ages 10 and 14 for girls and ages 12 and 16 for boys. As the body changes, they may also have questions about sexual health.

During this time, they start to develop their own unique personality and opinions. Some changes that they might notice include:

- Increased independence from parents
- More concerns about body image and clothes
- More influence from friends /peers
- Greater ability to sense right and wrong

All of these changes can sometimes seem overwhelming.  
Some sadness or moodiness can be normal.

#### **NOTE!!!**

Feeling very sad, hopeless, or worthless could be warning signs of mental health problem. For help, encourage them to talk to parents, school counselor, or health care provider.

### **ADOLESCENCE**

Adolescence, these years from puberty to adulthood, may be roughly divided into three stages:

- Early adolescence, generally ages (11-14) eleven to fourteen
- middle adolescence, ages (15-17) fifteen to seventeen
- late adolescence, ages (18-21) eighteen to twenty-one.

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In addition to physiological growth, several key intellectual, psychological and social, developmental tasks are involved in these years.

The fundamental purpose of these tasks is to form one's own identity and to prepare for adulthood.

### **SAFETY**

Parents play an important role in keeping the children safe, no matter how old he or she is.

There are a few tips to help protect the children such as:  
Making sure the teen knows about the importance of wearing a seatbelt.  
Motor vehicle crashes are the leading cause of death among 12- to 14-year-old.

Encourage the teen to wear a helmet when:

- riding a bike or a
- skateboard or
- using inline skates;
- riding on a motorcycle,
- snowmobile,
- playing contact sports.

Injuries from sports and other recreational activities are common.  
Educate the teen, also talk with them about the dangers of drugs, drinking, smoking, and risky sexual activity.

Ask the teens about what they know and/ or think about these issues (drugs, drinking, smoking etc) and share thoughts and feelings with them.

Listen to what the teenagers have to say and answer the questions honestly and directly. Talk with the teen about the importance of having friends/ peers who are interested in activities that are positive.

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### **UNHEALTHY DECISIONS /CHOICES**

Encourage the teens to avoid friends/ peers who pressure them to make unhealthy choices. Also it is very important to know where the teens are and whether an adult is present. Arrange /make plans with them for when they will call, where to find them, and what time to expect them home.

### **HOME ALONE**

It is very important to set clear rules for the teens when they are home alone. Talk about completing homework and household tasks, talk about issues such as having friends at the house, how to handle situations that can be dangerous such as:

- emergencies,
- fire,
- drugs,
- sex

### **PHYSICAL DEVELOPMENT**

Puberty is defined as the biological changes of adolescence. By mid-adolescence, if not earlier, most youngsters' physiological growth is complete; they are at or close to their adult weight and height, and are now physically capable of reproduction (having babies).

### **INTELLECTUAL DEVELOPMENT**

It is stated that most teens enter adolescence still viewing the world in terms of right or wrong, awesome or not cool or awful, focusing on the present and making decision without thinking of the long-term consequence of his/ her actions.

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During late adolescence, many youths grow to appreciate ideas/ situations and start to project into the future. Great improvement is seen as the Adolescent develops the ability to solve problems that are complex. However the adolescent are still inexperienced in life, and therefore can react without thinking.

### **Emotional Development**

At this time the adolescents are well known for asserting their independence, therefore it is often observed that they will distance themselves from their parents. As they strive toward autonomy, you will observe behaviors such as:

- Less overt affection,
- more time spent with friends/ peers,
- contentious behavior,
- pushing the limits.

However, adolescents frequently have conflicts regarding leaving the safety/ security of home. Sometimes they may go back and forth between seeking the parent's attention, then move away again.

### **Social Development**

Until the adolescent stage, the child's life has revolved primarily around the family. At adolescence, their social circle widens to include friendships with others from different social/ ethnic groups, and members of the opposite or same sex.

As mentioned earlier, not all teenagers enter adolescence at the same age and not all teenagers express the same behaviors. Therefore some youths may be farther along in some areas of development than in others.

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### PEDIATRIC INJURIES

Injuries are the leading cause of death in children ages 19 and younger. Most child injuries can be prevented. Parents, guardians and caregivers can play a life saving role in keeping children safe by protecting them from injuries.

Pediatric injuries some of the most common causes include:

- Motor vehicle accidents
- Suffocation
- Drowning
- Poisoning
- Burns
- Falls

### PEDIATRIC CRITICAL CARE

The child who has life-threatening or severe injuries needs critical care. Whenever children experience life-threatening injuries, they are often admitted to the pediatric intensive care units (PICUs) within hospital, so that they can receive critical care that is needed at that time.



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The pediatric intensive care units (PICUs) are equipped and staffed with physicians who have specialized training in pediatric critical care.

Children often experience a wide range of injury type, complexity, and severity; the injuries may affect multiple organ systems, therefore the pediatric intensive care units (PICUs) are staffed with many types of specialized health care providers.

These include physicians trained in:

Pediatric emergency care,  
pediatric trauma surgeons,  
pediatric anesthesiologists,  
cardiologists,  
Neurologists.

Other specialized health care providers include:

Pediatric nurses,  
social workers,  
psychologists, and  
others.

Some of the most common causes of pediatric injury are:

Motor vehicle accidents

In children ages 5 to 19:

Injuries from motor vehicle accidents are the top cause of death from injury.

Every hour, almost 150 children visit emergency departments due to serious injuries from motor vehicle accidents.

Suffocation;

Infants are most likely to suffocate while they sleep.

Toddlers are most at risk from suffocating by choking on small objects or food items.

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### **Drowning**

Drowning is the most common cause of injury death in children ages 1 to 14.

Three children die every day from drowning.

### **Poisoning**

Two children die every day from poisoning.

Each day, more than 300 children ages -infants to 19 in the United States go to emergency departments because of poisoning.

Common sources of poisoning include medications, household cleaners and chemicals.

### **Burns**

Two children die every day from being burned.

Each day, more than 300 children ages 0 to 19 arrive in emergency departments to be treated for burns.

Younger children are more likely to be burned by hot liquids or steam.

Older children are more likely to be burned from direct contact with fire.

### **Falls**

Falls are the most common cause of nonfatal injuries for children ages 0 to 19.

Each day, about 8,000 children visit emergency departments due to injuries from falls.



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### **Burn Prevention**

According to the CDC, every day, over 300 children ages 0 to 19 are treated in emergency rooms for burn-related injuries and 2 children die as a result of being burned.

Younger children are more likely to sustain injuries from scald burns that are caused by hot liquids or steam, while older children are more likely to sustain injuries from flame burns that are caused by direct contact with fire.



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### **PREVENTION TIPS**



**To prevent burns from fires and scalding:**

### **FIRE SAFETY /SMOKE ALARMS**

Teach parents and caregivers to install and maintain smoke alarms in the home (on every floor and close to all rooms where they sleep).

Test the smoke alarms once per month to ensure that they are functioning properly. It is also helpful to use long life batteries whenever possible.

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Teach parents and caregivers to develop and practice a family fire escape plan, and involve children in the planning. It is helpful to ensure that everyone knows at least 2 ways out of every room and identify a central meeting place outside.

### **WATER HEATER TEMPERATURE**

Checking water heater temperature;

Water heater's thermostat should be set to 120 degrees Fahrenheit or lower. Infants and small children may not be able to get away from water that may be too hot, and maintaining a constant thermostat setting can help control the water temperature throughout the home; therefore preventing the water from getting too hot. Also test the water at the tap.



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### COOKING PRACTICES

Teach parents and caregivers to cook with care using safe cooking practices, for example never leaving food unattended on the stove. Supervise or restrict children's use of ovens, stoves, and especially microwaves.



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### **POISONING PREVENTION**

According to the CDC, every day, over 300 children in the United States ages 0 to 19 are treated in an emergency department, and 2 children die, as a result of being poisoned. Children are often curious and will sometimes investigate; by trying to drink or eat anything that they can reach.

Everyday items within the home, for example, household cleaners/ chemicals and medications, can be poisonous to children. Medication dosing mistakes and unsupervised ingestions are common ways that children are poisoned.

Teach parents and caregivers to poison-proof their home and protect the children.



### **PREVENTION TIPS**

Keep all medications and toxic products, for example detergent pods and cleaning solutions, in their original containers where children cannot see or cannot reach them. Make sure they are Locked up and put away after each use.

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### POISON CONTROL 1-800-222-1222

Teach parents and caregivers the contact number for the poison control number and tips for easy access such as keeping the nationwide poison control center telephone number (1-800-222-1222) on every telephone in the house and program it into all cell phones. This number may also be placed close to all the telephones in the house.

Teach parents and caregivers to call the poison control center if they think a child has been poisoned but they are awake and alert; they can be reached 24 hours a day, seven days a week. ***However teach the parents and caregivers to call 911 if they have a poison emergency and the child is not breathing or has collapsed.***

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### MEDICATION LABELS

Teach parents and caregivers to always read the labels carefully.

Follow label directions exactly as directed and read all warnings when giving medications to the children.

### SAFE DISPOSAL OF MEDICATIONS

Teach parents and caregivers to safely dispose of expired, unneeded, or unused prescription medications and over-the-counter medications, supplements and vitamins.

There are several safe ways to dispose of medications such as:

- Mixing them with coffee grounds and throwing them away
- Mixing them with cat litter and throwing them away
- Turn them in at a local take-back program
- Turn them in during the National Drug Take-Back events.



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### PHARMACOLOGY

The absorption, distribution, excretion and metabolism of medication can vary throughout infancy, early childhood and puberty.

#### Drug Absorption

Drug absorption in infants and children can be altered from adult values by 2 factors:

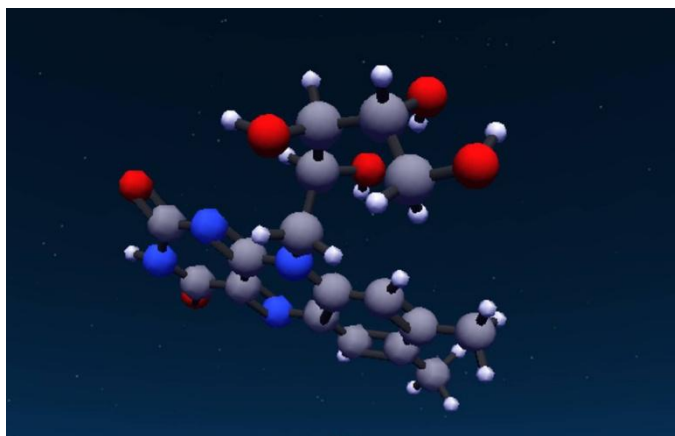
- Gastrointestinal (GI) function and
- Blood flow at the site of administration (rectal, intramuscular or percutaneous).

Most medications that are administered orally are absorbed in the small intestine.

Since infants have proportionately larger small intestinal surface areas, this may result in unpredictable absorption compared with adults. Infants have increased intestinal motility, which can alter the absorption of medications with limited water solubility. (PA and NP 2016).

Neonates have reduced lipase secretion, which decreases the ability for the neonate to absorb lipid formulations. Gastric pH is higher in the neonate (pH >5) and infant (pH 2-4). Gastric pH reaches adult levels (pH 2-3) at age 20 months to 30 months.

Young infants (<12 months) have increased percutaneous absorption of topical medications due to well-hydrated, thinner stratum corneum. Systemic toxicity may occur with small amounts of topical application of medications.





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### Distribution

Within the 1<sup>st</sup> few months of life, there are changes within body composition that alters the physiologic spaces in which medications are distributed.

Infants and newborns have a higher percentage of body water; 70% - 80% (infants) and in adults; 60%. The percentage of total body water is related to the amount of body fat; at maturity, men have slightly higher total body water than women, mainly due to the differences in body composition.

The % of body water in infants, neonates and during puberty can affect the dosing of some medications drugs.

Infants, who are younger than 6 months old, have less plasma proteins available for drug binding. This will cause increase levels of unbound medications, resulting in drug toxicity, this may occur with normal or low plasma concentration of total drug.

The blood-brain barrier is incomplete and permeable in the newborn, leading to increased central nervous system (CNS) effects of some medications; Phenobarbital levels in the brains of neonates are higher than phenobarbital levels in older children and adults.

### Elimination

Renal elimination rates are affected by the lower glomerular filtration rate in newborns, which is only 30% to 40% of adult values. The glomerular filtration rate rises in the first 2 weeks of life in the preterm and term neonate; birthweight >1,500 g.

By age 6 to 12 months, the glomerular filtration rate reaches adult values. Any medication that depends on renal excretion are cleared slowly in neonates.

- Drug dosages and dosing intervals in newborns needs to be adjusted accordingly when prescribing certain medications.

Renal blood flow is also reduced in neonates and reaches adult levels at approximately 9 months old.

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### Metabolism

As mentioned earlier, most of the research has been conducted in the adult population.

In the very young neonate and infant, the delayed maturity of drug-metabolizing enzymes may account for drug toxicity. The pathways of drug clearance develop variably over the 1st year of life and may be influenced by medications that induce drug-metabolizing enzymes.

There has been an increase in knowledge about the role of phase I cytochrome P450 and phase II enzymes in drug metabolism during the past few years, however a lot is still not known.

### Pediatric formulations



Pediatric formulations for several medications are lacking. Many medications are effective in adults but not used in children because of the lack of pediatric formulations.

There is also not enough funding available for the development of liquid stable forms of medications.

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The *Food and Drug Administration Modernization Act* (FDAMA) incentive encourages pediatric formulations of new medications, but there is not enough financial incentive for older medications.

One of the obstacles is that data about the stability of medications in liquid form is scarce.

Stability of medications can be affected by several factors, such as:

- Storage temperature,
- Type of container and vehicle; sugar can affect the stability of some medications.

The National Institute of Child Health and Human Development (NICHD) has established pediatric pharmacology research units (PPRUs) to facilitate the study of pediatric pharmacology. The mission of the pediatric pharmacology research unit network is to facilitate and promote pediatric labeling of new medications or drugs that are already on the market.

The pediatric pharmacology research units study the pharmacokinetics and pharmacodynamics of medications in a collaboration which involves pediatric academic researchers, pediatric clinical pharmacologists and industry.

## **ROAD TRAFFIC SAFETY**

To keep the children safe and secure, it is beneficial to know how to prevent the leading causes of children injuries, such as road traffic injuries.

According to the CDC, every hour, nearly 150 children between ages 0 and 19 are treated in the emergency department for injuries they sustained during motor vehicle crashes. It is reported that more children ages 5 to 19 die from crash related injuries than from any other type of injury.

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### **CAR SEAT / KNOW THE STAGES**

Teach parents and caregivers to make sure children are secure and buckled properly in their car seats, booster seats, or seat belts, whichever is appropriate for the child's age, height and weight.

### **PROPER RESTRAINTS NEEDED FOR EVERY TRIP**

The children have to be buckled in car seats, booster seats, or seat belts as applicable for every trip, even when the trip is short.

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### **REAR-FACING CAR SEAT - BIRTH UP TO AGE 2**

For the best possible protection, infants and children should be buckled in a rear-facing car seat, in the back seat, until age 2 or when they reach the upper height or weight limits of their particular seat. It is best to follow the instructions on the seat's owner's manual and/or labels on the seat, this also provides the weight and height limits.

### **FORWARD-FACING CAR SEAT - AGE 2 UP TO AT LEAST AGE 5**

When the children have outgrown their rear-facing seats they should be placed and buckled in a car seat that is forward-facing, in the back seat, until they are at least age 5 or when they reach the upper weight or height limit of their particular seat. Always check the seat's owner's manual and/or label on the seat for height and weight limits.

### **BOOSTER SEAT - AGE 5 UP UNTIL SEAT BELTS FIT PROPERLY**

When the children outgrow their forward-facing seat; by reaching the upper weight or height limit of their seat, they need to be buckled in a belt positioning booster seat until the seat belts fit properly. Seat belts fit properly when the lap belt lies across the upper thighs and not the stomach, with the shoulder belt lying across the chest and not the neck. Always keep the children properly buckled in the back seat for the very best protection.

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### **WHEN SEAT BELTS FIT PROPERLY WITHOUT A BOOSTER SEAT: SEAT BELT**

When the seat belts fit them properly, the children no longer need to use the booster seat. Seat belts fit properly when the lap belt lays across the upper thighs and not the stomach, and the shoulder belt lies across the chest and not the neck. For the best protection keep the children buckled properly in the back seat.

### **INSTALL CAR & BOOSTER SEATS PROPERLY**

Always instruct parents and caregiver to install and use car seats and booster seats according to the seat's owner's manual or to seek assistance regarding how to install them from a certified Child Passenger Safety Technician.

### **DO NOT SEAT CHILDREN IN FRONT OF AIRBAGS**

All children from age 12 and under should be buckled in the back seat. Airbags can be dangerous for this age group and can kill young children who are traveling in the front seat. Also you cannot place a rear-facing car seat in front of an air bag.

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### MIDDLE OF THE BACK SEAT

Children should be placed and buckled in the middle of the back seat whenever possible, because this is the safest spot in the vehicle.

### PARENTS AND CAREGIVERS/ ROLE MODELS

Instruct parents and caregivers to always wear a seat belt which set a good example for the children.





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### TEEN DRIVERS

Teach parents / caregivers who have teens who are learning to drive to sign a Driving Agreement. By signing a Parent Teen Driving Agreement with the teen, this will limit risky driving behaviors/ situations, such as driving late at night or having multiple teen passengers.





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According to the CDC, many parents do not realize that the number one (#1 ) threat to their teen's safety is riding or driving in a car with a teen driver. More than 2,000 teens lose their lives each year in car crashes (six teens a day) with the main cause being driver inexperience.

Injuries and deaths are preventable; six teens a day are killed in car crashes. Parents and caregivers need to make sure the young driver is aware of the leading causes of teen crashes. Then using the parent-teen driving agreement, put rules in place that will help the teen stay safe.



## **INEXPERIENCE DRIVER**

Crash risk is highest in the 1<sup>st</sup> year a teen has their license.

**Parents and caregivers can assist by:**

- Providing at least 30hours to 50 hours of supervised driving practice for at least 6 months,
- Practice on a variety of roads,

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- Practice with the teen at different times of day,
- Practice with the teen in various weather condition
- Practice with the teen in various traffic conditions.
- Emphasize the importance of continually watching out for potential hazards such as other vehicles, pedestrians and bicyclists.

### **TEEN DRIVING WITH TEEN PASSENGERS**

It is reported that crash risk increases when the teen drives with other teens in the car.

Parents and caregivers can:

- Follow the state's Graduated Driver Licensing system for passenger restrictions. If your state does not have such a rule, limit the amount of teen passengers the teen can have to zero or one.
- Keep this rule for at least the first 6 months that the teen is driving.

### **DRIVING AT NIGHT**

For all ages, fatal crashes are more likely to occur at night; however the risk is higher for teens.

Parents and caregivers can:

- Make sure the teen is off the road by 9 or 10 p.m. for at least the first 6 months of licensed driving.
- Practice nighttime driving with the teen when teen seems to be ready.

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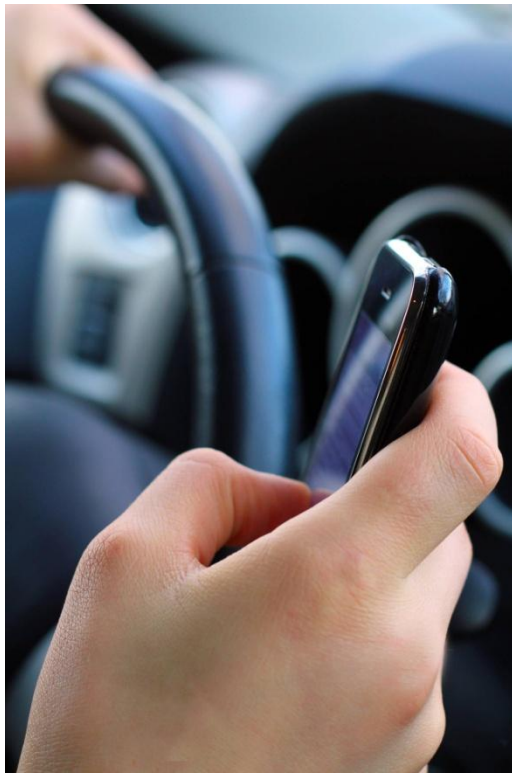
### **SEAT BELT USE**

The simplest way to prevent car crash deaths is to buckle up.

**Parents and caregivers can:**

- Require the teen to wear a seat belt on every trip. This simple step can reduce the teen's risk of being badly injured or dying in a crash by about 1/2.

### **DISTRACTIONS WHILE DRIVING**



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Distractions increase the teen's risk of being in a car accident/crash.

### **WHAT PARENTS AND CAREGIVERS CAN DO**

Instruct the teen to:

AVOID activities that may take his/ her attention away from driving, for example talking on the cell phone, eating and/ or drinking, texting or tuning or playing with the radio.

Parents and caregivers can also learn more about distracted driving, so that they can inform the teens and bring awareness to them.

### **DROWSY /SLEEPY DRIVING**

It is reported that young drivers are at high risk for drowsy driving, which has caused thousands of crashes each year. It has been noted that teens are most tired and are at risk when driving in the early AM or during the late hours of the night.

#### **What Parents and caregivers Can Do**

Know your teen's schedule so you can be sure he or she is well rested before getting behind the wheel.

### **RECKLESS DRIVING**

Research has shown that teens do not have the judgment, experience, and the maturity to assess the risky circumstances/situations.

### **WHAT PARENTS AND CAREGIVERS CAN DO**

Parents and caregivers can make sure the teens are aware and know that they have to follow the speed limit and also be aware of the need to adjust the speed to match the road conditions.

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Parents and caregivers can also remind the teens to maintain enough space behind the vehicle that is in front of them, to avoid a crash in the event that the driver ahead of them makes a sudden stop.

### **DRINKING AND DRIVING**



It is reported that one drink will impair the teen's driving ability and will therefore increase their risk of an accident/ crash.

### **WHAT PARENTS AND CAREGIVERS CAN DO**

Parents and caregivers can be a good role model to the teen by not drinking and driving.

Reinforce the message (DO NOT DRINK AND DRIVE) with a Parent-Teen Driving Agreement.

Parent and caregivers can also learn more about impaired driving.

Review the stats on teen drinking and driving and also review it with the teen.

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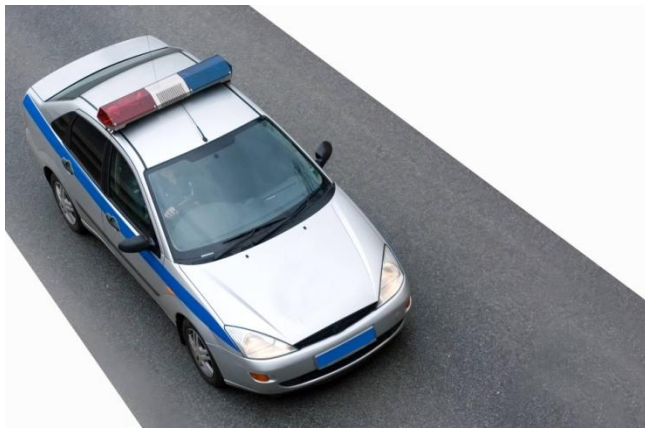
According to the CDC, the percentage of teenagers in high school, who drink and drive has dropped by more than 1/2 since 1991, but there is more that can be done. Almost one million high school teens drank alcohol and got behind the wheel in 2011. It is reported that teenage drivers are three times more likely than more experienced drivers to be in a crash that with fatality. Drinking alcohol, even in small amounts, increases this risk for teenagers.

Research has shown that factors that help to keep teenagers safe include:

- Involvement from parents/caregivers,
- Minimum legal drinking age
- Zero tolerance laws, and
- Graduated driver licensing systems.

These steps help to protect the lives of the young drivers and everyone else who drives with them as well as others who share the road with them.

A survey revealed that High school students aged 16 years and older said they had driven a vehicle 1 or more times during the past thirty days when they had been drinking alcohol.



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Drinking and driving can be deadly for older individuals and especially for teenagers.

### **STATS**

Drinking and driving among teenagers in high school has gone down by 54% since 1991. However, high school teenagers reported driving after drinking about 2.4 million times a month.

85% of teens in high school who report drinking and driving in the past month also say they binge drank. In the survey, binge drinking was defined as drinking 5 or more alcoholic drinks within a couple of hours.

In 2010, 1 in 5 teenage drivers who were involved in fatal crashes had some alcohol content in their system. Most of these drivers (81%) had Blood alcohol concentration (BAC) that was higher than the legal limit for adults.

### **BLOOD ALCOHOL CONCENTRATION**

It is illegal for adults to drive with a Blood alcohol concentration of 0 .08% or higher. It is illegal for anyone under age 21 to drive after drinking any alcohol in all U.S. states.

### **INTERVENTIONS**

Communities and States can work to:

- Increase the awareness among parents, caregivers and teens,
- Strengthen enforcement of existing policies, for example minimum legal drinking age graduated driver licensing systems and zero tolerance laws.

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### **PEDIATRICIANS AND OTHER HEALTH PROFESSIONALS CAN:**

Screen teenagers for risky behaviors, such as:

Using alcohol,

Using drugs or other substances

Driving after drinking alcohol

Driving after drug use

Riding with a driver who has been using drugs or alcohol

Educate parents/ caregivers, and teens about the risks involved with drinking and driving.

Encourage parents/ caregivers of new teen drivers to set and enforce the driving rules/ rules of the road and utilize tools such as the parent-teen driving agreement.

Remind/instruct the parents/ caregivers to set an example as safe drivers.

### **TEENS CAN:**

Choose to NOT drink and drive.

Refuse to ride in a car with a teenage driver who has been drinking.

Know the state's Driving laws.

Follow the state's Driving laws.

Follow the speed limits.

Follow the rules of the road in the parent-teen driving agreement.

Wear a seat belt on every trip, even short trips.

Avoid using a cell phone while driving



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Avoid texting while driving.

### **PARENTS AND CAREGIVERS CAN:**

Model safe driving behaviors as the teens are observing and will follow those behaviors.

Understand that most teenagers who drink – are drinking to get drunk.

Recognize the dangers of teen drinking and driving

Recognize that teen drivers are at much higher risk of crashing after drinking alcohol than adult drivers.

Provide teens with a safe way to get home if their driver has been drinking (instruct teens to call for a ride home or pay for a taxi ride home for them).

Utilize tools such as the parent-teen driving agreements to set and enforce the rules of the road for teen drivers.

Safe driving habits for teens include behaviors such as:

Follow state Driving laws

Follow the speed limits.

Not to ever drink and drive

Never use a cell phone while driving

Never text while driving

Wear a seat belt at all times, when driving

Limit driving at night

Set a limit on the amount of teenage passengers

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### **Alcohol misuse**

The National Institute on Alcohol Abuse and Alcoholism uses the following definitions of alcohol misuse:

- Alcohol misuse describes alcohol consumption that puts individuals at increased risk for adverse health and social consequences.



The Centers for Disease Control and Prevention (CDC) Alcohol Team uses the following definitions of alcohol misuse:

### **Alcohol misuse**

Excessive drinking includes:

- heavy drinking, binge drinking or both

Alcohol misuse is a pattern of drinking that result in:

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- harm to one's health,
- harm to one's ability to work or
- harm to one's interpersonal relationships.

Alcohol dependence, also known as alcohol addiction and alcoholism, is a chronic disease and is associated with experiencing withdrawal symptoms, loss of control, or alcohol tolerance

Alcohol misuse can result in a number of adverse health and social consequences.

According to the Centers for Disease Control and Prevention (CDC),

- More than 700,000 Americans receive alcoholism treatment each day, and there is growing recognition that alcoholism; alcohol dependence or addition, represents only one end of the spectrum of alcohol misuse (CDC 2013).

There are approximately 79,000 deaths attributable to excessive alcohol use each year in the United States.

### **Adverse Health Outcomes**

Alcohol misuse is a risk factor for a number of adverse health outcomes including:

Unintentional injuries such as motor vehicle accidents, falls

Violence for example homicide, suicide

Liver disease

Diseases of the central nervous system such as stroke, dementia

Heart disease including coronary artery disease, atrial fibrillation/ abnormal heart rhythms, high blood pressure, and congestive heart failure

Various cancers for example breast, colorectal, and liver cancers

Risky sexual behaviors and adverse pregnancy outcomes.

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Many individuals who have problem with alcohol misuse have medical problems or social problems attributable to alcohol; alcohol misuse or excessive drinking, without typical signs of dependence, and other drinkers are at risk for future problems due to chronic alcohol consumption or frequent binges. Nondependent drinkers who misuse alcohol account for the majority of alcohol related disability and death in the general population (CDC 2013).

### **MOTORCYCLE, BICYCLE, SKATEBOARD, SCOOTER, OR SKATES**

Teach parents and caregivers to make sure the children wear their helmets. Helmets will help. Children need to wear an appropriate helmet any time they are on a motorcycle, bicycle, skateboard, scooter, or skates.



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### DROWNING PREVENTION

Teach parents / caregivers that knowing how to prevent leading causes of child injury, like drowning, is a step toward keeping the children safe. Children should not swim without supervision.



Going to the beach or pool is always a fun filled activity, however there is a potential for injury and death if precautions are not taken. According to the CDC, drowning is a leading cause of injury death for young children ages 1 to 14, and 3 children die every day as a result of drowning. In fact, drowning kills more children 1-4 than anything else except birth defects.

### PREVENTION TIPS

Life-saving skills should be taught to parents, caregivers and the children who are old enough to learn them. Knowing the basics of swimming such as floating, moving through the water and cardiopulmonary resuscitation (CPR) is very important.

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### **SWIMMING POOLS FENCING**

Teach parents/ caregivers the importance of fencing off the pool site, such as installing a four sided isolation fence, around the swimming pools with self closing and self latching gates. This will help to keep the children away from the area when they are not supposed to be swimming.

### **LIFE JACKETS**

Teach parents/ caregivers the importance of ensuring that the children wear life jackets around and in natural bodies of water, for example the ocean or the lake, even when they know how to swim. If the child is a weak swimmer, make sure that he/she wears life jacket even in or around the pool.

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### **SUPERVISION**

When the children are near or in water they have to be supervised. Closely supervising the children at all times will help to prevent accident/incidents. Drowning happens very quickly and quietly, therefore adults who are supervising /watching the children near or in water need to avoid distracting activities such as reading a book, talking on the phone, and drinking alcohol or using drugs.



### **FALL PREVENTION**

Knowing how to prevent leading causes of child injury, such as falls, is a move toward keeping the children safe and secure.

According to the CDC, falls are the leading cause of non-fatal injuries for all children ages 0 to 19. Every day, approximately 8,000 children are treated in United States emergency rooms for fall-related injuries. This is almost 2.8 million children each year.

Falls can be prevented, and parents and caregivers can play a vital role in protecting the children.

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## **PREVENTION TIPS**

### **SAFETY WHILE PLAYING**

It has been reported that falls on the playground are a common cause of injury. Parents and caregivers need to check to make sure that the surfaces under playground equipment are soft, safe, and has the appropriate materials for example sand or wood chips, not grass or dirt. The surface materials have to be an appropriate depth and have to be well maintained.

### **HOME SAFETY**

There are several safety measures that parents and caregivers can take to make sure the house is safe. Using home safety devices, for example, guard rails, guards on windows that are above ground level and stair gates. These devices will help to keep the active child from taking a dangerous fall.



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### **SPORTS SAFETY**

Teach /remind parents and caregivers to make sure their children wear protective gears during sports activities as well as recreation, such as whenever they are using in-line skates, wear wrist guards, knee pads and elbow pads, and also a helmet.



### **SUPERVISION**

Supervision of young children is vital to their safety and well being. Young children must be supervised at all times when they are around fall hazards at home or out to play, for example at the playground around playground equipment, around the stairs at home.

### **PLAYGROUND SAFETY**

According to the CDC, every year in the United States, emergency departments treat more than 200,000 children ages 14 and younger for playground related injuries. More

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than 20,000 of these children are treated for a traumatic brain injury (TBI), which includes concussion. More research is needed to have a better understanding of what specific activities are putting children at risk of injury and what changes in playground; playground equipment and the playground surfaces might help to prevent the injuries.



### **OCCURRENCE & CONSEQUENCES OF PLAYGROUND - RELATED INJURIES**

Emergency Department-Treated, Playground-Related Injuries:

- About 56% of playground-related injuries that are treated in emergency department are contusions/abrasion and fractures.
- About 75% of injuries related to playground equipments occur on a public playground. Most injuries occur at school or a place of recreation.

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### Playground-Related Traumatic Brain Injuries (TBI):

- The overall rate of emergency department visits for playground-related Traumatic Brain Injuries has increased significantly in recent years (2005-2013).
- About 2/3<sup>rd</sup> of playground-related Traumatic Brain Injuries occurred at school and places of recreation or sports and often involved climbing equipment, monkey bars, or swings.
- Most emergency department visits for playground-related Traumatic Brain Injuries occur during weekdays, Monday through Friday.

## **DEATHS**

The Consumer Product Safety Commission investigated 40 deaths associated with playground equipment between 2001 and 2008. The average age of children who died was 6 years old. Of these 68% – 27 died from strangulation and 15% - 6 died from falls to the playground surface. Most strangulation involved the combination of swings or slides and jump ropes, other types of ropes, clothes drawstrings or dog leashes.

## **PREVENTION**

Take steps to keep children safe such as:

- Check the playgrounds; make sure they have soft material under them for example wood chips, mulch or sand.

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- Read playground signs and use playground equipment that is right for the child's age.
- Check to make sure there are guardrails in place and in good condition to help prevent accidents/falls.
- Checking for things in the playground area that may cause the child to trip, such as rocks or tree stumps.

## **SPORTS SAFETY**

Recreation activities and participating in sports is a vital part of a physically active and healthy lifestyle for children. Unfortunately injuries can occur during these events/ activities. According to the CDC, more than 2.6 million children 0-19 years old are treated in the emergency department each year for sports and recreation-related injuries.

However there are steps that parents and caregivers can take to help make sure the children are safe wherever they participate or play in recreation activities/ sports.

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### **PREVENTION TIPS**

#### **GOOD MODEL**

Encourage and teach parents and caregivers to serve as a model of safe behavior, such as wearing a helmet when applicable, following the safety rules and to communicate strong positive safety tips and messages to the children.

#### **PROTECTIVE GEARS**

Teach parents and caregivers that before the children participate in sports events and recreation, to ensure that they use the right protective gear for the activities, for example helmets, elbow or knee pads, wrist guards.

#### **RIGHT PROTECTIVE EQUIPMENT**

Teach parents and caregivers to check to make sure that the sports protective equipments fit properly as poorly fitting equipments may cause discomfort, may not offer the best protection and can be uncomfortable.

Teach parents and caregivers to check to make sure that the sports protective equipments are in good condition, and are worn correctly at all times, for example, avoid broken or missing buckles or avoid worn out padding.

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### LEARN AND PRACTICE SKILLS

Teach parents and caregivers to make sure that the children learn and practice the skills that they need in the activity, such as practicing proper form which can prevent injuries during softball, baseball, and other sports or recreational activities.

Parents and caregivers should also slowly and safely increase the activities to improve the children's physical fitness because being in good condition can also protect children from injury.



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### **TEMPERATURE ALERT**

Parents, caregivers and coaches should allow time for child athletes to gradually adjust to temperature - hot or humid environments to prevent heat-related illness or injuries. Parents, caregivers and coaches need to make sure that the players are hydrated well and dressed appropriately for temperature.



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**TAKE EXAM**



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