

INJURY PREVENTION AND ANTICIPATORY GUIDANCE

RATIONALE:

Unintentional injuries remain the leading cause of death and disability among California children under the age of 13, causing more deaths than all other childhood diseases combined. In 2006, there were 26,361 children and adolescents hospitalized with nonfatal injuries¹ and in 2009, 1,982 children and adolescents died from injuries in California. Beyond the loss of years of potential life, injuries cost society billions of dollars each year in medical expenses.

Motor vehicle related injuries are often preventable, but are among the top causes of death and hospitalization among children under age 20. Injuries related to child seat safety were one of the five leading causes of fatalities in 2009, according to the National Highway Traffic Safety Administration (NHTSA). The Vehicle Occupant Safety Program (VOSP), in the Epidemiology and Prevention for Injury Control (EPIC) Branch of the California Department of Public Health (CDPH), strives to prevent injuries and death to infants and toddlers in California by increasing the correct use of child safety seats, and also aims to strengthen and expand California's child passenger safety infrastructure. (See Table 56.1 for California Vehicle Restraint Laws). There are also a significant number of preventable injuries attributed to non-motor vehicles. Because of the increase in injuries related to bicycles, California Vehicle Code, Section 21212(a) states that a properly fitting helmet must be worn when operating or being a passenger on, a bicycle, non-motorized scooter, or skateboard and when using in-line or roller skates. See Table 56.2, Leading Causes of Fatal Injuries in California 2009.

While unintentional injury plays a major role among younger children, intentional injury, or violence, is the predominant cause of death and disability among adolescents. Homicide is the leading cause of death for California youth between the ages of 13 and 20 years. Suicide is the fourth leading cause of death among all California youth ages 13 through 20 years.² Many deaths related to unintentional injury are related to the presence of firearms. Studies show that hand guns in the home are the primary source that teenagers use to commit suicide. Because of this, it is vital for health assessment providers to discuss gun safety in the home, including the dangers of improperly secured or unlocked guns. The California Child Access Prevention Law imposes criminal liability on adults who negligently leave firearms accessible to children or otherwise allow children access to firearms. The presence of unlocked guns in the home increases the risk of both accidental gun injuries and intentional shootings.³ Studies have found that the risk of suicide increases in homes where guns are kept loaded and /or unlocked.⁴

¹ California Department of Statewide Health Planning and Development, Patient Discharge Data 2006.

² Emergency Preparedness and Injury Control (EPIC) Branch, California Department of Public Health, 2007 Vital Statistics, Death Statistical Master File.

³ Cal Penal Code § 12035, 12036; California Civil Code § 1714.3

⁴ United States Secret Service, U.S. Department of Treasury, *An Interim Report on the Prevention of Targeted Violence in Schools* 6 (October 2000).

Table 56.1 California Vehicle Restraint Laws V.C. 27360(a), (c)

Infants – Rear Facing Seats	Toddlers* – Forward Facing Seats	Pre-School – Booster Seats**	Older Kids – Safety Belts
Newborn to 1 yr of age <i>and</i> at least 20 lbs	1 yr old & <i>and</i> 20 lbs to 4 yrs old or 40 lbs	Children over 40 lbs	Age 8 <i>and</i> over 80 lbs**
Always rear facing in back seat	Forward facing in back seat	Booster seat in back seat	
Recline seat so baby's head doesn't flop forward	Shoulder harness snug and flat	Use lap and shoulder belts	Knees bend over edge of vehicle seat
	Seat in an upright position	Lap belt fits low and snug across hips	Lap belt fits low and snug across hips
Seat attached tightly with vehicle belt	Seat is attached tightly with vehicle belt	Shoulder belt crosses the collar-bone and center of chest	Shoulder belt crosses the collar-bone and center of chest

*It is best to ride rear-facing as long as possible.

**Children should stay in a booster seat until adult belts fit correctly, usually when a child reaches about 4'9" in height and is between 8 and 12 years of age.

Table 56.2 Leading Causes of Fatal Injuries in California 2009, Ages 0-19

Ages < 1	Ages 1-4	Ages 5-9	Ages 10-14	Ages 15-19
Suffocation	Drowning	MV Occupant	Homicide	Homicide
Homicide	Homicide	MV Unspecified	Suicide	Suicide
MV Unspecified	MV Pedestrian	Homicide	MV Occupant	MV Unspecified
MV_Occupant	Pedestrian Other	Drowning	MV Unspecified	MV Occupant
Drowning	MV Occupant	MV Pedestrian	Drowning	Poisoning
			MV Pedestrian	
			MV Bicyclist	

MV = Motor Vehicle

Source: Emergency Preparedness and Injury Control (EPIC) Branch, California Department of Public Health, 2009 Vital Statistics, Death Statistical Master File.

SCREENING REQUIREMENTS:

- Assess for risk of unintentional injury through history taking, physical exam, and identification of any specific environmental risks. See Table 56.3 Examples of Developmental Stages and Associated Risk for Injury.
- Provide parents with information they need to create a safe play and living area for children. Ask if there is a gun in the family's home or in the home where the child spends time. If so, review gun safety information.
http://kidshealth.org/parent/firstaid_safe/home/gun_safety.html
- Educate parents about what to expect with the development of their child and the risk of injury associated with the child's development. See Table 56.4 Anticipatory Guidance for Childhood Injury Prevention.
- Supplement anticipatory guidance with culturally appropriate and relevant educational materials.
- Provide youth and adolescents with the information they need to recognize and respond to hazards and violence in their environment.

CONSIDERATIONS FOR TREATMENT, REFERRAL, AND/OR FOLLOW-UP:

- Refer children and families to information and community resources that will assist them with specific injury prevention needs (such as help in obtaining car seats or helmets).
 - <http://www.cdph.ca.gov/programs/Pages/CPSinCalifornia-VOSP.aspx>
 - <http://www.nhtsa.gov/>
 - <http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/4StepsFlyer.pdf>
- For children with special health care needs, anticipatory guidance should be appropriate for the child's developmental stage rather than the chronological age. Particular attention should be given to the child's behavioral characteristics and anticipate how these characteristics affect the child's interaction with the environment and risk of injury.

ANTICIPATORY GUIDANCE RELATED TO INJURY PREVENTION

SUDDEN INFANT DEATH SYNDROME (SIDS):

SIDS is the sudden death of an infant under one year of age which remains unexplained after a complete postmortem investigation, including autopsy, examination of the death scene, and review of the clinical history. It is the leading cause of death in infancy beyond the neonatal period. In 1992, the American Academy of Pediatrics recommended changing infant's sleep position from stomach to back to reduce the risk of SIDS. The program, "Back to Sleep", has been associated with a significant decrease in the proportion of infants sleeping in the prone position, as well as a decreased incidence of SIDS.⁵ In California in 2008, 201 babies died from SIDS. The rate of deaths due to SIDS was 36.4 per 100,000 live births, an overall increase of 12.7% from 2007.⁶

Unsafe sleeping practices that contribute to infant deaths due to suffocation include the presence of stuffed toys, blankets, pillows and crib bumpers in the sleeping area. It is important that parents and other caregivers use the back sleep position for naps and at night, and not allow smoking around infants. While sleeping, infants should not be allowed to overheat. Infants should be dressed in light sleep clothing and the room should be at a temperature that is comfortable for an adult. A firm sleep surface, such as a safety-approved crib mattress covered by a fitted sheet should be used.

MOTOR VEHICLE SAFETY:

The National Highway Traffic Safety Administration recommends that "children should stay in a booster seat until adult seat belts fit correctly, usually when a child reaches about 4'9" in height and is between 8 to 12 years of age." The NHTSA also provides the following guidelines to ensure this safety:

- Birth – 12 months: The child under age 1 should always ride in a rear-facing car seat.
- 1 – 3 years: Keep the child rear-facing as long as possible until he or she reaches the top height or weight allowed by your car seat's manufacturer. Once the child has outgrown the rear-facing car seat, switch to a forward-facing car seat with a harness.
- 4 – 7 years: Keep the child forward-facing as long as possible until he or she reaches the top height or weight allowed by your car seat's manufacturer. Once the child has outgrown the forward-facing 5 point harness car seat, switch to a booster seat, but have the child remain in the back seat.

⁵ American Academy of Pediatrics, Task Force on Sudden Infant Death Syndrome. The changing concept of Sudden Infant Death Syndrome: diagnostic coding shifts, controversies regarding the sleeping environment, and new variables to consider in reducing risk. *Pediatrics*. 2005; 116:1245-1255. <http://aappolicy.aappublications.org/cgi/reprint/pediatrics;116/5/1245.pdf>

⁶ California Department of Public Health Birth Statistical and Death Statistical Master Files, 2008.

- 8 – 12 years: Keep the child in the booster seat until he or she is big enough to fit in a seat belt properly. The seat belt must lie snugly across the upper thighs, not the stomach. The shoulder belt should lie snug across the shoulder and chest and not across the neck or face.

It is recommended that the adult driver consider the above criteria and recommendations in determining whether the child over 8 years of age is ready to transition from a booster seat to a standard lap and shoulder belt.

Additional recent recommendations from NHTSA include:

- Always read child seat manufacturers' instructions and the vehicle owner's manual for important information on height and weight limits and how to install the car seat using the seat belt or the LATCH system.
- All children under 13 should ride in the back seat.
- Children in rear-facing car seats should never ride behind of an active passenger air bag.

BICYCLE, SCOOTER, SKATE, AND SKATEBOARD SAFETY:

The potential for serious head injuries is greater without the use of a properly fitting helmet while riding a bicycle, scooter (motorized and non-motorized) or using skates or skateboards. According to the U.S. Consumer Product Safety Commission (CPSC), there were an estimated 151,024 head injuries treated in hospital emergency rooms due to bicycles, 18,743 due to skateboards, and 15,622 due to non-motorized scooters in 2004.⁷ According to the California Vehicle Code, Division 11, Rules of the Road, Chapter 1, Article 4, Section 21212, a person under age 18 shall not operate or be a passenger of a bicycle, a non-motorized scooter, or a skateboard without wearing a properly fitted and fastened bicycle helmet that meets the standards of either the American Society for Testing and Materials (ASTM) or the United States Consumer Product Safety Commission (CPSC).⁸ When an appropriate helmet is worn, most of the impact of a fall or collision will be absorbed by the helmet rather than to the head and brain. Other protective gear, such as wrist guards, elbow and knee pads can also reduce the number and severity of injuries. It is important that parents teach their children to be cognizant of traffic laws while riding bicycles, scooters, skateboards as well as skating. Observance of traffic laws will also serve as a protection from injuries. Careful selection of protective gear is a vital aspect of injury prevention. The following information can be found on the website of the U.S. Consumer Product Safety Commission at www.cpsc.gov:

- Bicycle helmets manufactured after 1999 must meet the CPSC's bicycle helmet standard.
- A helmet should be both comfortable and snug.
- A helmet should fit level on top of the head, not tilted back or pulled too low over the forehead.

⁷ U.S. Consumer Product Safety Commission, Washington, D.C. 20207; www.cpsc.gov

⁸ <http://www.dmv.ca.gov/pubs/vctop/d11/vc21212.htm>

- The chin strap should fit properly.
- The helmet should not block the rider's vision or hearing.

The following pamphlet, "*Which Helmet for Which Activity?*" is useful when choosing the proper helmet:

<http://www.cpsc.gov/cpsc/pub/pubs/349.pdf>

WATER SAFETY:

In California, the leading cause of death for children ages 1-4 is drowning. Children need constant supervision around water — whether the water is in a bathtub, a wading pool, an ornamental fish pond, a swimming pool, a spa, the beach, or a lake. Young children are especially vulnerable — they can drown in less than 2 inches (6 centimeters) of water. Drowning can happen where you would least expect it — the sink, the toilet bowl, fountains, buckets, inflatable pools, or small bodies of standing water around the home, such as ditches filled with rain water. Children should always be watched closely when they are in or near any water.⁹ The installation of four-sided fences with self-latching mechanisms that are out of reach of children and self-closing gates around backyard swimming pools serve as a protection for young children. The fence should be at least 4 feet high and separated from the home. Also, consider additional barriers such as automatic door locks or alarms to prevent access or notify you if someone enters the pool area. Floats, balls and other toys should be removed from the pool and surrounding area immediately after use. The presence of these toys may encourage children to enter the pool area or lean over the pool and potentially fall in.

To help prevent water-related injuries, the CDC recommends the following:¹⁰

- Designate a responsible adult to watch young children while in the bath and all children swimming or playing in or around water. Adults should not be involved in any other distracting activity (such as reading, playing cards, talking on the phone, or mowing the lawn) while supervising children.
- Always swim with a buddy. Select swimming sites that have lifeguards whenever possible.
- Avoid drinking alcohol before or during swimming, boating, or water skiing. Do not drink alcohol while supervising children.

⁹ http://kidshealth.org/parent/fitness/safety/water_safety.html#a_Keeping_Kids_Safe

¹⁰ Centers for Disease Control and Prevention: <http://www.cdc.gov/HomeandRecreationalSafety/Water-Safety/waterinjuries-factsheet.html> CDC Water-Related Injuries Facts

- Learn to swim. Be aware that the American Academy of Pediatrics does not recommend swimming classes as the primary means of drowning prevention for children younger than 4. Constant, careful supervision and barriers such as pool fencing are necessary even when children have completed swimming classes.
- Learn cardiopulmonary resuscitation (CPR). In the time it might take for paramedics to arrive, your CPR skills could make a difference in someone's life. CPR performed by bystanders has been shown to improve outcomes in drowning victims.
- Do not use air-filled or foam toys, such as "water wings", "noodles", or inner-tubes, in place of life jackets (personal flotation devices). These toys are not designed to keep swimmers safe.

Refer families to the following resources regarding water safety:

http://kidshealth.org/parent/fitness/safety/water_safety.html#a_Keeping_Kids_Safe

POISON CONTROL:

Poisonings are very common, occurring in over 2 million people a year, with just over half of those cases in children under 5 years of age.¹¹ It is important that parents safeguard their home because everyday household products can be poisonous to children. Medications and toxic products, such as cleaning solutions, should be kept in locked or childproof cabinets. Parents should be instructed to keep the number to the Poison Control Center with a list of other emergency numbers by the phone.

The AAP recommends the following poisoning prevention tips for parents:¹²

- Keep harmful products locked up and out of your child's sight and reach.
- Use safety latches or locks on drawers and cabinets where you keep hazardous items.
- Take extra care during stressful times.
- Call medicine by its correct name. You do not want to confuse the child by calling medicine candy.
- Always replace the safety caps immediately after use.
- Never leave alcohol within a child's reach.
- Seek help if your child swallows a substance that is not food. Call the Poison Help Line or your doctor. Don't make your child vomit.

¹¹ American Association of Poison Control Centers 2009 Annual Report.
<http://www.aapcc.org/dnn/Portals/0/correctedannualreport.pdf>

¹² AAP Parenting Corner -- Tips for Poison Prevention and Treatment:
<http://www.healthychildren.org/English/news/Pages/Tips-for-Poison-Prevention-and-Treatment.aspx>

The following toll-free number can be used to directly connect families to their local poison control center:

1-800-222-1222

BURNS:

According to the Centers for Disease Control and Prevention (CDC), accidental or intentional injury is a leading cause of death among children 14 years of age and younger. Burns and fires are the fifth most common causes of accidental death in children and adults, and account for an estimated 4,000 adult and child deaths per year. The key to reducing childhood burn injuries is prevention. It is important for parents to safeguard their homes. This includes:

- Installation and maintenance of smoke alarms on every floor and near all rooms that family members sleep in. Test smoke alarms frequently to make sure they are working properly. Batteries should be changed at least once a year.
- Periodic checks of electrical plugs and outlets.
- Having an emergency escape plan. This should be practiced regularly with children. Identify at least two ways out of every room and identify a central meeting location outside.
- Cook with care -- never leave food unattended on the stove. Turn handles of pot and pans inward toward the stove, away from the reach of children.
- Set water heater thermostat to 120 degrees Fahrenheit or lower to prevent burns from scalding water.
- Keep emergency phone numbers and other pertinent information posted close to the telephone.

The CDC has tips sheets and other information on childhood injury, including steps that families can take to protect children at the following link:

www.cdc.gov/safechild

Developmental Stages and Risk for Injury:

Childhood injuries occur as a result of a very predictable relationship between the child and their environment. With each developmental stage, children are at risk for different types of injuries as shown in Table 56.3. Additional factors influencing the risk for childhood injury include sex, race, income, urban or rural area, and season.

Table 56.3 Examples of Developmental Stages and Associated Risk for Injury

Age	Developmental Characteristics	Associated Risk for Injury
Newborn and Infant	Rapid motor development: begins grasping and rolling over unexpectedly	Falls from couches, tables, and beds Burns from hot liquids Choking/suffocation Vehicle occupant injury
Toddler and Preschool	Intense curiosity Highly mobile and active Cannot control impulses	Falls from stairs, play equipment, and shopping carts Poisoning Drowning Vehicle occupant injury
School Age	Prove self-worth by performing daring feats Challenge parents' rules Darting-out behavior	Bicycle crashes Motor-vehicle pedestrian injury Street related injuries
Adolescent	Experimentation and risk-taking Seek social and peer approval Seek independence	Motor-vehicle occupant injury Firearms related homicide Suicide

Source: Emergency Preparedness and Injury Control (EPIC) Branch. California Department of Public Health, Report No. 4, March 1994

Table 56.4 Anticipatory Guidance for Childhood Injury Prevention¹³

Age	Introduce	Message
Birth to One Month	<ul style="list-style-type: none"> • Infant car seat • Clean air • Back to Sleep • Falls 	<p>Install rear-facing infant safety seat in back seat of car. Use the car safety seat EVERY time your child is in the car.</p> <p>Keep home and car smoke-free. Your baby should also not be in a room that is moldy or damaged by mildew.</p> <p>Know signs of illness: fever >100.4 F, seizure, rash, unusual irritability, lethargy, failure to eat, vomiting, diarrhea, dehydration, jaundice.</p> <p>Put baby to sleep on back to reduce SIDS risk. Use a firm mattress without pillows, loose blankets, or stuffed toys. NEVER put your baby on a water bed, bean bag, or anything that is soft enough to cover the face and block air to the nose and mouth.</p> <p>Do not leave your baby alone in tub, on changing tables, or chairs; always keep hand on baby. The only safe places to leave your baby alone are in the crib or playpen.</p>

¹³ Adapted from “The Injury Prevention Program” (TIPP), a program of the American Academy of Pediatrics and Bright Futures, Third Edition, 2008.

Age	Introduce	Message
Two to Six Months	<ul style="list-style-type: none"> • Burns-hot liquids • Choking • Baby walkers • Plastic bags • Bedding 	<p>NEVER carry your baby and hot liquids, such as coffee, or foods at the same time. Your baby can get burned.</p> <p>Babies explore their environment by putting anything and everything into their mouths. NEVER leave small objects within your baby's reach. NEVER feed your baby hard pieces of food such as chunks of raw carrots, apples, hot dogs, grapes, peanuts, and popcorn.</p> <p>Do not use a baby walker as your baby may fall down stairs or pull hot or heavy items onto self.</p> <p>Plastic wrappers and bags form a tight seal if placed over the mouth and nose and may suffocate your child. Keep them away from your baby.</p> <p>Use a firm mattress without pillows, loose blankets, or soft toys. Place your baby on his/her back to sleep.</p>

<p>Six to Twelve Months</p>	<ul style="list-style-type: none"> • Drowning • Poisoning • Childproof home • Falls • Sun exposure • Car seat • Car safety 	<p>NEVER leave your child alone in or near a bathtub, pail of water, wading or swimming pool, or any other water, even for a moment. Drowning can happen in less than 2 inches of water.</p> <p>Many ordinary things in your house can be poisonous to your child. Keep all household products such as cleaners and chemicals out of reach of your child. Lock up all pills, including vitamin, iron, and prenatal pills.</p> <p>Poison Action Line: 1-800-222-1222</p> <p>Put safety lock devices on drawers, cabinets, doors, and electrical plugs. Place your baby's crib away from windows. Cords from window blinds and draperies can strangle your child. Tie cords high and out of reach. Do not knot cords together.</p> <p>Use gates on stairways and place window guards or secure screens on all windows in your home above the first floor.</p> <p>Be sure to apply sun screen of at least SPF 15 any time your child is out in the sun.</p> <p>Switch to a front-facing car seat when your baby has passed his/her first birthday, weighs twenty pounds and can sit up by himself; use at all times and make sure it is correctly installed.</p> <p>Do not leave your child alone in the car. Keep vehicles and their trunks locked. There are dangers involved with leaving children in a car; death from excess heat may occur very quickly in warm weather in a closed car.</p>
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<p>One to Four Years</p>	<ul style="list-style-type: none"> • Pedestrian Injury • Firearms • Discipline • Child abuse • Tricycles/bicycles • Falls –Play equipment • Water/pool safety 	<p>Do not let child play in driveways or near busy streets. Always supervise near pets, mowers, driveways, and streets.</p> <p>Remove or lock up all guns from places where children live and play. Keep bullets separate from guns and use trigger locks for added safety.</p> <p>Nonviolent discipline is more effective than physical discipline. Shaking, hitting, and spanking are violent and inappropriate forms of discipline. These methods are more likely to lead to injury, and also model violent behavior.</p> <p>Aggression and violent behavior when dealing with family and friends must be addressed. Children who witness violence, even on TV, are more likely to use violence later.</p> <p>Children riding tricycles should always wear a bicycle helmet. California law requires that all children under 18 years of age wear helmets when riding bicycles.</p> <p>Be sure the surface under play equipment is soft enough to absorb a fall. Grass, sand, or wood chips work the best.</p> <p>Never let your child swim alone. Use a life jacket when around pools and especially for river, lake, canal, and ocean swimming.</p>
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<p>Five to Ten Years</p>	<ul style="list-style-type: none"> • Seat belt • Fire safety • Sports safety • Bicycle safety 	<p>Correctly use a car seat or booster seat and seat belt every time your child is in the car. Children under 6 years or under 60 pounds must be in car seats. Your child should use a booster seat until the lap belt can be worn low and flat on the hips and the shoulder belt can be worn across the shoulder rather than the face or neck (usually at about 80 pounds and about 4 feet 9 inches tall).</p> <p>Install smoke or fire detectors in your home and develop and practice an escape plan in case of a fire in the home. Change smoke detector batteries at least once a year.</p> <p>Make sure your child wears all the protective equipment made for a sport and make sure the equipment is in good shape.</p> <p>Enforce bicycle safety rules and always make sure your child wears a bicycle helmet.</p>
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<p>Eleven to Twenty-one years</p>	<ul style="list-style-type: none"> • Firearms hazards • Violence • Physical/emotional/sexual abuse • Suicide • Bicycle and car safety • Alcohol and drug use • Work safety 	<p>It is safest if you do not keep guns in the home. If you do have a gun, be sure to lock up guns and bullets separately. Use trigger locks for additional safety. Talk with your child about the dangers of guns.</p> <p>Seek help if your child has difficulty dealing with conflict (i.e. he/she becomes aggressively angry or seeks revenge) or if you are concerned if he/she is in a gang.</p> <p>Talk with your child about physical, emotional, and sexual abuse, pointing out that you are there to help them.</p> <p>Seek help if your adolescent shows signs of depression or emotional problems as indicated by declining school performance or changes in mood, sleep, or body weight.</p> <p>Ensure that your preteen/teen always uses an approved helmet and always wears a seat belt.</p> <p>Discuss the issues regarding alcohol and other drug use with your child.</p> <p>Reinforce the importance of wearing protective gear and following safety procedures.</p>
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