



Best Practices For Unintentional Injury Prevention



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Introduction

Injury is a serious public health problem because of its impact on the health of people in Nebraska, including premature death, disability, and the burden on our health care system. Injuries are one of the leading causes of death for Nebraskans of all ages, regardless of gender, race or economic status (Table 1).

Table 1.
10 Leading Causes of Death, Nebraska
2002, All Races, Both Sexes

Rank	Age Groups										All Ages
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 42	Unintentional Injury 13	Unintentional Injury 10	Unintentional Injury 12	Unintentional Injury 130	Unintentional Injury 63	Malignant Neoplasms 89	Malignant Neoplasms 232	Malignant Neoplasms 507	Heart Disease 3,656	Heart Disease 4,242
2	SIDS 19	Homicide 3	Malignant Neoplasms 5	Malignant Neoplasms 3	Suicide 26	Suicide 34	Unintentional Injury 78	Heart Disease 172	Heart Disease 323	Malignant Neoplasms 2,568	Malignant Neoplasms 3,433
3	Maternal Pregnancy Comp. 14	Acute Bronchitis 2	Congenital Anomalies 3	Heart Disease 1	Homicide 11	Malignant Neoplasms 19	Heart Disease 66	Unintentional Injury 83	Chronic Low. Respiratory Disease 65	Cerebrovascular 1,004	Cerebrovascular 1,103
4	Placenta Cord Membranes 11	Congenital Anomalies 2	Cerebrovascular 1	Homicide 1	Malignant Neoplasms 7	Heart Disease 16	Suicide 49	Suicide 40	Unintentional Injury 50	Chronic Low. Respiratory Disease 844	Chronic Low. Respiratory Disease 934
5	Short Gestation 11	Malignant Neoplasms 2	Hernia 1	Suicide 1	Heart Disease 6	Homicide 11	Liver Disease 19	Cerebrovascular 34	Cerebrovascular 44	Alzheimer's Disease 459	Unintentional Injury 762
6	Bacterial Sepsis 8	Benign Neoplasms 1	Influenza & Pneumonia 1		Chronic Low. Respiratory Disease 2	Cerebrovascular 4	Cerebrovascular 15	Liver Disease 33	Diabetes Mellitus 39	Influenza & Pneumonia 377	Alzheimer's Disease 460
7	Respiratory Distress 7	Septicemia 1			Eight Tied 1	Diabetes Mellitus 4	HIV 15	Diabetes Mellitus 20	Nephritis 28	Diabetes Mellitus 323	Influenza & Pneumonia 418
8	Influenza & Pneumonia 5				Eight Tied 1	Congenital Anomalies 3	Homicide 13	Influenza & Pneumonia 16	Liver Disease 23	Unintentional Injury 322	Diabetes Mellitus 393
9	Intrauterine Hypoxia 4				Eight Tied 1	HIV 3	Chronic Low. Respiratory Disease 8	Chronic Low. Respiratory Disease 14	Suicide 21	Nephritis 240	Nephritis 277
10	Five Tied 3				Eight Tied 1	Liver Disease 3	Two Tied 7	Septicemia 10	Septicemia 15	Parkinson's Disease 141	Suicide 201

Produced By: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC
Data Source: National Center for Health Statistics (NCHS) Vital Statistics System.

Injury deaths are only part of the total picture. Many Nebraskans are injured each year and survive. For many of them, the injury causes temporary pain and inconvenience, but for some, the injury leads to disability, chronic pain, large medical bills, and a profound change in lifestyle.

Injuries are preventable—they do not occur at random. People tend to see unintentional injuries happening as a result of unpreventable “accidents”, when in fact, most injuries are predictable and preventable.

The aim of this guide is to provide information and guidance to a wide variety of users on what works for the prevention of unintentional injuries. The reason this guide was produced is because resources (money, time, staff) are always limited and should be used for those prevention programs which have been proven to be effective. This information can be valuable in setting priorities, choosing effective strategies, and targeting an audience. Injury prevention professionals in health departments, community agencies and other organizations need to have information about what strategies are effective and what may be worthwhile to replicate in their community.

The implementation of prevention strategies with proven efficacy -- finding out "what works" in injury prevention and control-- is of major public health importance. Health departments, community agencies, health care providers, policy makers, and injury prevention and control professionals are faced with large amounts of information that is distributed through a large number of sources. Prevention strategies need systematic reviews to provide a basis for good decision making. It is quite likely that when currently available evidence on the effectiveness of injury prevention interventions is thoroughly reviewed, many interventions believed to be effective will be shown to be ineffective and vice versa. Most importantly, such reviews will clarify which programs are appropriate to implement on a broader scale.

This guide is divided into five chapters covering the following unintentional injuries: falls, fire and burns, motor vehicle related injuries, poisoning, and traumatic brain injuries. These topics were chosen based on data that demonstrated that they were some of the leading causes of injury in Nebraska. Each chapter is divided into five sections: describing the problem, ways to prevent the unintentional injury, best practices for injury prevention, references, and resources.

If a program is implemented using existing services, facilities, and organizations in the community, it is more likely to be sustainable and transferable to other settings.²

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Falls

The Problem

Children

- Falls are the leading cause of unintentional injury for children age 14 and under in the U.S. and in Nebraska.¹
- In general, children age 10 and under are injured from falls at a rate about twice that of the total population.¹
- Falls represent the largest share of injury costs for children age 14 and under, accounting for more than one-quarter of all childhood unintentional injury-related costs.¹
- In Nebraska, the 1 – 4 year age group had the highest injury rate due to falls.²
- More than 80% of fall-related injuries among children age 4 and under occur in the home.¹
- Most falls happen from furniture, stairs, baby walkers, shopping carts, and playground toys.³
- In Nebraska, children ages 10-14 are more likely to be injured due to falls related to sports or recreation.²
- Falls are the most common form of playground injury and account for approximately 80% of all playground equipment-related injuries. Head injuries are involved in 75% of all fall-related deaths associated with playground equipment.⁴
- Nationally, about 75% of nonfatal injuries related to playground equipment occur on public playgrounds. Most occur at schools and daycare centers.⁵
- Approximately 70% of playground equipment-related injuries involve falls to the surface, and 10% involve falls onto equipment.⁴

In Nebraska, falls are the leading cause of hospitalization for children age 14 and under.²

Ways to Prevent Falls in Children

- Use of safety gates at the top and bottom of stairs if there are infants or toddlers in the home.¹

- Move chairs, cribs and other furniture away from windows.¹
- Supervise children in the home. Never leave a child unattended on a changing table, in a highchair, or on other furniture.¹
- Never use baby walkers with wheels. Use stationary activity centers or walker alternatives.¹
- Use helmets and other appropriate safety gear properly at all times when participating in recreational activities such as riding a bike, skate boarding, in-line skating or when participating in sports activities.^{6,7,8,9,10}
- Ensure children are safe on the playground through supervision, use of age appropriate equipment, proper cushioning under playground equipment, and maintenance of equipment.^{11,12}

Best Practices in Fall Prevention for Children

- A population-based epidemiological analysis determined that parents and others who care for infants should be informed of the “3 A’s” for infant injury control: anticipate, act, and be accountable. All of the injuries documented in the analysis were preventable if the caregiver had acted to prevent the injury.^{1,3,13}
- In a study to evaluate the effectiveness of state helmet laws, research found that bicycle helmet use was significantly increased by children following the onset of the helmet law.^{7,8}
- Research has shown community-based education programs to reduce bicycle-related head injuries among children by promoting the use of helmets are successful. Program components could include: public and physician education, school safety programs, an outreach campaign for low-income populations, extensive media coverage, bike rodeos, fitting and distribution of helmets, helmet discounts, and informational brochures in monthly insurance and utility bills.^{8,9,10,14,15,16}
- Protective surfacing under and around playground equipment can reduce the severity of and even prevent playground fall-related injuries. A study to determine the risk of injuries associated with environmental hazards in playgrounds (public parks and school playgrounds) found that there is a strong association between injuries and the use of inappropriate surface materials under and around the equipment. Acceptable surfaces include hardwood fiber/mulch, pea gravel, sand and synthetic materials such as poured in place, rubber mats or tiles. Playground surfaces should not be concrete, asphalt, grass, blacktop, packed dirt or rocks.^{4,11,17,18}
- A research project found that working intensively with schools to overcome barriers to upgrading playground equipment can lead to a reduction in hazards for children utilizing the playground equipment, and is more effective than providing information alone. The program initially audited the school playgrounds for hazards. After the audit, the school received a health promotion program consisting of information about the hazards, an engineer's report, regular contact and encouragement to act on the report, and assistance in obtaining funding to upgrade equipment.¹⁹

The Problem

Older Adults

- The risk of falling increases with age.²⁰
- At least 95% of hip fractures among older adults are caused by falls.²⁰
- Hip fractures are among the most serious fall related injuries. Half of older adults who suffer a hip fracture never again regain their previous level of functioning, and many are unable to live independently after their injury.²¹
- In Nebraska, approximately 78% of those hospitalized for fall-related injuries were 65 years and older.²²
- In Nebraska, 33% of patients with fall-related injuries were hospitalized for 6-9 days; 12% were hospitalized for 10 days or longer.²²

For people age 65 and older, falls are the
leading cause of injury death.²⁰

Ways to Prevent Falls in Older Adults

- Maintaining a regular exercise or dance program to improve strength, balance, and coordination.²³
- Have a health care provider review medications that may cause dizziness or disorientation.²³
- Regular visits to an eye doctor to have vision checked.²³
- Maintain proper lighting in stairwells and other areas.²³
- Install grab bars next to the toilet and in the tub or shower.⁶
- Attach non-slip mats in the bathtub and on shower floors.⁶
- Remove tripping hazards such as small area rugs and loose electrical cords.⁶
- Install handrails on stairways.⁶
- Use a step stool with a grab bar or extension “grabber” to reach objects on high shelves.⁶
- Conduct a home fall prevention and safety inventory.²⁴

Best Practices in Fall Prevention for Older Adults

- Exercise programs that include a variety of exercises designed to improve balance, coordination, aerobic capacity, and muscle strength help to prevent falls. Balance and coordination exercises could include modified Tai Chi, dance, and throwing/catching a ball. Strength work could include resistance exercises using the participant's body weight and the use of resistance bands for upper and lower limbs. Aerobic exercise may incorporate fast walking and changing directions.^{25,26,27}
- Programs that incorporate a multi-risk intervention strategy have been effective in reducing falls in older adults. Program components could include: medication review with primary physician or pharmacist, education session with participant about use of sedatives and medications, training in transfer skills, assessment of homes for any potential environmental hazards for falls or tripping, gait training, vision screening, cognitive evaluation, and competency based balance and strengthening exercises.^{28,29,30}
- The use of external hip protectors can reduce the risk of hip fractures in older adults.³¹

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Resources for Fall Prevention

American Academy of Family Physicians
www.aafp.org

American Association of Retired Persons
www.aarp.org

Bicycle Helmet Safety Institute
<http://www.helmets.org/index.htm>

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control
www.cdc.gov/ncipc/duip/spotlite/falls.htm
<http://www.cdc.gov/ncipc/pub-res/toolkit/SummaryOfFalls.htm>

NSW Health
<http://www.health.nsw.gov.au/public-health/health-promotion/injury-prevention/types-of-injury/falls.html>

National Institute on Aging
www.nih.gov/nia/

National Program for Playground Safety
<http://www.uni.edu/playground>

National Safety Association
<http://www.nsc.org>

National Safe Kids Campaign
<http://www.safekids.org>

National Safety Council – Greater Omaha Chapter
<http://www.safenebraska.org/>

Mayo Clinic
www.mayoclinic.com

SafetyLit
<http://www.safetylit.org/>

The National Resource Center for Safe Aging
www.safeaging.org/

Virtual Children’s Hospital
www.vh.org/pediatric

Fire and Burns

The Problem

- From 1999 to 2003, there were 79 fire-related fatalities in Nebraska, which is an average of 16 deaths per year.¹ Males accounted for 62% of these deaths.
- On the average in the United States in 2002, someone died in a fire nearly every 3 hours, and someone was injured every 37 minutes.²
- In 2002, four out of every five U.S. fire deaths occurred in the home.²
- Most victims of fires die from smoke or toxic gases and not from burns.²
- Cooking is the primary cause of residential fires; smoking is the leading cause of fire related deaths.²
- Each year, nearly 40,000 children age 14 and under are injured by fires in the home.³

Homes with smoke alarms typically have a death rate that is 40-50% less than the rate for homes without smoke alarms.⁴

Ways to Prevent Fires and Burns

- Install smoke alarms in your home on every level and in every sleeping area. Test them once a month, replace batteries at least once a year, and replace the alarms every ten years.³
- Keep matches, gasoline, lighters and all other flammable materials locked away and out of children's reach.^{3,5}
- Never leave a candle burning unattended.³
- Plan and practice several fire escape routes from each room of the home, and identify a safe outside meeting place.^{3,6}
- For the home, select a multi-purpose fire extinguisher that can be used on all types of home fires. These are large enough to put out a small fire, but not too heavy to handle.⁶
- Do not smoke in bed or empty smoldering ashes into trash cans; never leave burning cigarettes unattended; and keep ashtrays away from upholstered furniture and curtains.⁷

Best Practices in Fire and Burn Prevention

- Installation of smoke alarms on each level of a home is an effective strategy for preventing injuries and deaths due to residential fire, provided that they are properly maintained.^{3,8}
- The Oklahoma State Department of Health conducted a study that demonstrated smoke detector giveaways and canvassing were effective among high risk, socioeconomically disadvantaged urban populations. Several different methods of soliciting participants were used, including notifying residents by mail, placing flyers on the doors of every habitable residence, and displaying flyers at public places (grocery stores, convenience stores, restaurants, etc), and canvassing.^{9,10,11}

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Resources for Fire Prevention

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control
www.cdc.gov/ncipc

Home Safety Council
<http://www.homesafetycouncil.org>

National Fire Protection Association
<http://www.nfpa.org>

SafetyLit
<http://www.safetylit.org/>

United States Fire Administration
<http://www.usfa.fema.gov/safety/>

Virtual Children's Hospital
www.vh.org/pediatric

According to the U.S. Fire Administration/National Fire Data Center's report, *Socioeconomic Factors and the Incidence of Fire*, populations at the lowest income levels are at a greater risk of dying in a fire than those with higher incomes.¹²

Motor Vehicle Related Injuries

The Problem

General Population

- Nationally, motor vehicle crashes are the leading cause of death for every age from 2 through 33 years old.¹
- Motor vehicle crashes are the largest cause of years of life lost in Nebraska. In 2002, 11,841 years of potential life were lost due to motor vehicle crashes. On average, persons killed in motor vehicle crashes in 2002 lost 40 years of potential life.²
- During 2003, there were 293 fatalities in Nebraska due to motor vehicle crashes. One crash occurred every 11 minutes, sixty people were injured each day and one person was killed every thirty hours in Nebraska.³

In Nebraska, crashes are the leading cause of death for ages 5 through 34.¹

Younger Drivers

- Motor vehicle crashes are the leading cause of death for 15 to 20 years olds.⁴
- In 2003, 7,884 15- to 20-year-old drivers were involved in fatal crashes - a 5% increase from the 7,484 involved in 1993. Driver fatalities for this age group increased by 13 percent between 1993 and 2003.⁴
- In Nebraska, younger drivers are involved in a disproportionate number of crashes. In 2003, drivers in the youngest age bracket, ages 15 to 24, made up only 18% of the total licensed drivers in Nebraska.⁵ However, younger drivers had the highest percent of involvement in all crashes (34%) and fatal crashes (27%).³

Older Drivers

- Most traffic fatalities involving older drivers in 2003 occurred during the daytime (82%), on weekdays (71%), and involved another vehicle (74%).⁶
- Drivers age 65 and older have higher crash death rates per mile driven than all but teen drivers.⁷
- The death rate for drivers over age 70 is approximately 9 times higher than the rate for drivers age 15 to 69.⁸

Alcohol Related Crashes

- The National Center for Statistics & Analysis estimates that alcohol was involved in 40% of fatal crashes and in 7 percent of all crashes in 2003.¹
- In 2003, 25% of the young drivers 15 to 20 years old who were killed in crashes had a BAC of 0.08 g/dl or higher.⁴
- In 2003, 65% of young drivers involved in fatal crashes had been drinking. Of the young drivers who had been drinking and were killed in crashes, 74% were unrestrained.⁴
- An alcohol-related motor vehicle crash kills someone every 31 minutes and non-fatally injures someone every two minutes.⁹
- In 2003, 38.9% of fatal crashes in Nebraska involved alcohol.⁸

Occupant Restraint Use

- Inappropriately restrained children are nearly three and a half times more likely to be seriously injured in a crash than their appropriately restrained counterparts.¹⁰
- Of the children ages 0 to 14 years who were killed in motor vehicle crashes during 2002, 50% were unrestrained. Of the children age 4 years and younger who were fatally injured in 2002, 40% were unrestrained.¹¹
- Twenty-one percent of motor vehicle occupants in Nebraska did not wear seatbelts in 2003. Of persons who were killed in motor vehicle crashes, 73% were unbelted.³
- Men in Nebraska are less likely than women to report using a safety belt. Male drivers are also more likely than female drivers to be involved in motor vehicle crashes.³
- In Nebraska, males were the drivers in 57% of all crashes and in 72% of all fatal crashes in 2003.³
- The prevalence of seat belt use is lower among rural Nebraskans, persons with less education, and those with lower annual household incomes.³
- In 2004, seat belt use averaged 84% in states with primary seat belt laws compared to 73% in states with secondary seat belt laws.¹²

Primary safety belt laws permit law enforcement officers to stop motorists solely for being unbelted. Secondary safety belt laws permit law enforcement officers to ticket unbelted motorists only if they are stopped for other reasons such as speeding.¹³

Ways to Prevent Motor Vehicle Related Injuries

- All children age 12 and under should be properly restrained in the back seat on every ride.¹⁰
- Never drive while under the influence of alcohol, drugs, or when sleep deprived.¹⁴
- Always use safety belts when riding in motor vehicles.⁸
- Prevent repeat Driving Under the Influence (DUI) offenders from driving.⁸
- Decrease availability of alcohol to those under the legal drinking age.⁸
- Provide older driver safety education courses.¹⁵

Safety belts cut the risk of death or serious injury in a car crash by 45 to 50 percent.¹⁶

Best Practices in Motor Vehicle Related Injury Prevention

- Research has shown that child safety seat distribution and education programs are effective when implemented in hospitals and clinics, as part of postnatal home visits, or when provided by an auto insurance company. Effectiveness was found among urban, suburban, and rural populations, and among affluent and poor populations.¹³
- Child safety seat checks and fitting stations have proven effective in increasing child safety seat use and reducing misuse.¹⁷
- The Task Force on Community Preventive Services found strong evidence that mass media campaigns were associated with a 13% decrease in total alcohol-related crashes. Campaign messages ranged from those focused on law enforcement activities and the legal consequences of drinking and driving to the social and health consequences of alcohol impaired driving.¹³
- Evidence shows that crashes thought to involve alcohol dropped a median of 20% following implementation of Selective Breath Testing (SBT).^{13, 18}

Selective Breath Testing (SBT) allows law enforcement officers to stop drivers when they have reason to suspect the driver may be driving while intoxicated.¹³

- States that implement a primary seat belt law have a higher usage rate compared to those with secondary laws.¹⁹
- Implementing a strict graduated licensing law. The Nebraska Office of Highway Safety reports that the number of reported crashes involving drivers younger than 19 years of age has significantly declined since the graduated licensing law went into effect in Nebraska in 1999.^{8,20}
- Findings in research show that exposure to the *Checkpoints* program increased parental limits for teen driving. The *Checkpoints* program taught parents how to manage teen driving risks through a concept based educational intervention. The intervention was aimed to reduce teen driving risk by increasing parental management of their teen's early driving through the use of educational messages, videos, newsletters, and a parent-teen driving agreement.^{20,21}
- Research indicates that the *Driving Decisions Workbook*, a self-assessment instrument for older drivers, increased self-awareness and general knowledge regarding this topic. Research shows the workbook is a useful first-tier assessment instrument and educational tool for the older driver.¹⁵

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Resources for Motor Vehicle Related Injury Prevention

Centers for Disease Control and Prevention
Motor Vehicle-Related Injuries
<http://www.cdc.gov/health/motor.htm>

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control
<http://www.cdc.gov/ncipc/duip/mvsafety.htm>

Centers for Disease Control and Prevention
Task Force on Community Preventive Services
<http://www.thecommunityguide.org/mvoi/default.htm>

Click It...Don't Risk It
<http://www.clickitdonriskit.com>

Insurance Institute for Highway Safety
<http://www.iihs.org/>

Keep Kids Alive Drive 25
<http://www.keepkidsalivedrive25.org/>

Mothers Against Drunk Driving
<http://www.madd.org/home/>

National Center for Statistics & Analysis
<http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/>

National Highway Traffic Safety Administration
<http://www.nhtsa.dot.gov/>

National Library of Medicine
Medline Plus
<http://www.nlm.nih.gov/medlineplus/motorvehiclesafety.html>

Nebraska Department of Motor Vehicles
<http://www.dmv.state.ne.us/>

National Safety Council – Greater Omaha Chapter
<http://www.safenebraska.org/>

National SAFE KIDS Campaign
<http://www.safekids.org>

Nebraska Safe Kids Campaign
<http://www.hhs.state.ne.us/hpe/safekids.htm>

Safe Ride News
<http://www.saferidenews.com>

SafetyLit
<http://www.safetylit.org/>

Poisoning

The Problem

- In 2002, more than 1.2 million unintentional poisonings among children age 5 and under were reported to U.S. poison control centers.¹
- Nearly 90% of all poison exposures occur in homes.¹
- In Nebraska, in 2003, 57% of poisoning exposures involved children less than six years of age.²
- Data from the Nebraska Regional Poison Center in Omaha showed that in 2003:
 - * 86% of poisoning exposures were unintentional;
 - * 11% were intentional;
 - * 2% were the result of adverse reactions to drugs or food; and
 - * 1% were due to substance contamination or tampering.²
- The most common poison exposures for children were ingestion of household products such as cosmetics and personal care products, cleaning substances, pain relievers, and plants.³
- Adolescents are also at risk for poisonings, both intentional and unintentional. About half of all poisonings among teens are classified as suicide attempts.³
- Childhood lead poisoning is considered one of the most preventable environmental diseases of young children yet approximately one million children have elevated blood levels.³
- Carbon monoxide is an odorless, colorless, tasteless gas that kills more than 500 Americans every year.^{1,4}
- Carbon monoxide (CO) results in more fatal unintentional poisonings in the United States than any other agent, with the highest number occurring during the winter months.³

You can contact the Nebraska Regional Poison Center at
1-800-222-1222 in Nebraska and Wyoming and at 955-5555
in Omaha.^{2,5}

Ways to Prevent Poisoning

- Store all household products and medications locked out of children's sight and reach. Never leave potentially poisonous household products unattended while in use.¹

- List the toll-free nationwide poison control center number and other emergency medical service numbers near every telephone.¹
- Always read labels, follow directions and give medicines to children based on their weights and ages. Only use the dispenser that comes packaged with children's medications.¹
- Store poisons in their original containers.⁵
- Test children for lead exposure, and test homes built before 1978 for lead-based paint.^{1,6}
- Lead hazards should be removed. The most common sources of lead are paint, dust, and soil. Other sources include: old painted toys and furniture, food and liquids stored in lead crystal or lead-glazed pottery or porcelain, lead smelters or other industries that release lead into the air, hobbies that use lead, such as making pottery or stained glass, or refinishing furniture, and folk remedies that contain lead, such as "greta" and "azarcon" used to treat an upset stomach.^{6, 7}
- Install carbon monoxide detectors in homes, in every sleeping area, and on the ceiling at least 15 feet from fuel-burning appliances. Carbon monoxide detectors with audible alarms are effective in alerting potential victims.^{1, 4,8,9,10}
- Ensure that space heaters, furnaces, fireplaces and wood-burning stoves are vented properly and inspected annually.^{1, 4}

Best Practices in Poisoning Prevention

- In a study conducted with elementary students, in grades kindergarten and third grade a poison prevention program proved to be an effective way in increasing their knowledge on the subject matter. The kindergarten lesson included: identification of poisonous substances, recognition of poison look-alikes, and the practice of the catch phrase, "Always ask first". The third grade lesson taught the students how to identify poisons in their environment, discussion of what to do in a poisoning emergency, how to poison proof their home.^{5,11,12}
- Research conducted with low-income and Spanish speaking families found that a culturally diverse videotape intervention was effective in changing knowledge, attitudes, behaviors, and behavioral intentions concerning poison control centers. The intervention included an educational videotape, a poison control center pamphlet, and poison control center stickers.¹³
- A cost-benefit analysis study by Miller and Lestina provides evidence that poison control centers are an excellent community investment, resulting in significant savings of medical spending. The average call to a poison control center for aid prevented approximately \$175 in other medical spending.¹⁴

- The Advisory Committee on Childhood Lead Poisoning Prevention published “Preventing Lead Exposure in Young Children: A Housing-Based Approach to Primary Prevention of Lead Poisoning” that identified eight elements as the foundation for a housing-based primary prevention program. These eight elements include: identification of high-risk areas, populations, and activities associated with housing based lead exposure; use of local data to expand resources and motivate action for primary prevention; development of strategies and services for creating lead safe housing; development of specifications for lead safe housing treatments; strengthening the regulatory infrastructure necessary to create lead safe housing; collaborative plans and programs with housing and other appropriate agencies; evaluate and redesign current programs to achieve primary prevention goals while ensuring adequate secondary interventions; and evaluate primary prevention progress, and identify research opportunities.¹⁵
- Research has confirmed that cities with carbon monoxide detector ordinances have lower carbon monoxide fatality rates.^{5,9}

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Resources for Poison Prevention

American Academy of Pediatrics
<http://www.aap.org/parents.html>

American Association of Poison Control Centers
www.aapcc.org

Centers for Disease Control and Prevention
Lead Poisoning Prevention Branch
www.cdc.gov/nceh/lead/lead.htm

Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health
www.cdc.gov/niosh

Consumer Product Safety Commission
www.consumer.gov/productsafety.htm

Household Products Database
<http://householdproducts.nlm.nih.gov/>

National Library of Medicine
Medline Plus
www.nlm.nih.gov/medlineplus/poisoning.html

National Animal Poison Control Center
www.asPCA.org

National Center for Environmental Health
www.cdc.gov/nceh/lead/lead.htm

National Lead Information Center
www.epa.gov/lead/nlic.htm

National Consumer Product Safety Commission
www.cpsc.gov

National SAFE KIDS Campaign
www.safekids.org

Nebraska Regional Poison Center
www.nebraskapoison.com

Poison Prevention Week Council
www.poisonprevention.org

U.S. Consumer Product Safety Commission
www.cpsc.gov

U.S. Department of Health and Human Services Public Health Service
Agency for Toxic Substances and Disease Registry (ATSDR)
www.atsdr.cdc.gov

U.S. Department of Housing and Urban Development
Office of Healthy Homes and Lead Hazard Control
www.hud.gov/offices/lead

Traumatic Brain Injuries

The Problem

- In the U.S., among children ages 0 to 14 years, traumatic brain injury (TBI) results in an estimated 3,000 deaths; 29,000 hospitalizations, and 400,000 emergency department visits.¹
- An estimated 300,000 sports-related brain injuries of mild to moderate severity occur in the United States each year.¹
- Each year, about 1.5 million Americans sustain a TBI. That's eight times the number of people diagnosed with breast cancer and 34 times the number of new cases of HIV/AIDS each year.²
- In Nebraska in 2002, falls and motor vehicle crashes accounted for over 80% of inpatient TBI.³
- Madonna Rehabilitation Hospital reports that common causes of household falls for children which may result in TBI include: falling from windows, climbing onto and falling from countertops, infants being tossed into the air by adults playing with them, children too old/tall and climbing out of/over crib rails, falling while jumping on the bed, falling down unprotected stairs, and use of baby walkers. For patients they see at their facility, falls involving baby walkers and falling out of grocery carts are the leading causes of head injuries for small children.⁴
- Nebraskans over the age of 75 accounted for 57% of inpatient TBI's due to falls in 2002.³
- The 15 – 24 year age group accounted for a disproportionately large inpatient and death percentage due to motor vehicle crashes in Nebraska in 2002.³
- In 2002, nearly 288,900 children age 14 and under were treated in hospital emergency rooms for bicycle-related injuries. Nearly half (47%) of children age 14 and under hospitalized for bicycle-related injuries are diagnosed with a traumatic brain injury.⁵
- Nationally, each year approximately 1,000 disabling neck and back injuries occur after people went headfirst into water which was shallow or too murky to see objects.⁶

The leading causes of TBI are vehicle crashes, firearm use, and falls.¹

Ways to Prevent Traumatic Brain Injuries

- Wear a seat belt every time you drive or ride in a motor vehicle.¹

- Always buckle children into a child safety seat, booster seat, or seat belt (according to the child's height, weight, and age) in a motor vehicle.¹
- Never drive while under the influence of alcohol, drugs, or when sleep deprived.¹
- Avoid falls in the home (refer to the section on falls).
- Make sure the surfaces of playgrounds are made of a shock absorbing material, such as hardwood fiber/mulch, pea gravel, sand and synthetic materials such as poured-in-place, rubber mats or tiles.^{1,7}
- Keep firearms stored unloaded in a locked cabinet or safe. Store bullets in a separate secured location.¹
- Wear properly fitted helmets when participating in activities when there is a chance of falling (i.e., riding a bike, playing a contact sport, using in-line skates or riding a skateboard, or riding a horse).¹
- Wear a motorcycle helmet when riding a motorcycle. A NHTSA study showed that motorcycle helmets are 67% effective in preventing brain injuries.⁸
- Bicycle helmets have been shown to reduce the risk of head injury by as much as 85% and the risk of brain injury by as much as 88%. One study found that children whose helmets fit poorly are at twice the risk of head injury compared with children with proper helmet fit.⁵
- Avoid diving into shallow water.⁶

Best Practices in Traumatic Brain Injury Prevention

- Research has demonstrated that the Standardized Assessment of Concussion (SAC) which includes measures of orientation, immediate memory, concentration, and delay recall is an effective tool in detecting concussion. The SAC is intended to be a standardized means of objectively documenting the presence and severity of concussions. Additionally, the SAC can track recovery and determine a player's ability to return to the sport. The information obtained from the SAC provides medical personnel with the immediate ability to make a clinical decision regarding the care of athletes.⁹
- Use of the computerized complex reaction time (RT) based neuropsychological procedure can quickly identify an individual with a concussion.¹⁰
- Refer to Best Practices of Fall Prevention for Children.
- Refer to Best Practices of Fall Prevention for Older Adults.
- Refer to Best Practices of Motor Vehicle Related Injury Prevention.

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Resources for Traumatic Brain Injury Prevention

American Academy of Orthopedic Surgeons
<http://www.aaos.org/>

Brain Injury Association of America
<http://www.biausa.org/Pages/home.html>

National Highway Traffic Safety Administration
<http://www.nhtsa.dot.gov/people/injury/childps>

National Program for Playground Safety
<http://www.uni.edu/playground>

National SAFE KIDS Campaign
www.safekids.org

National Institute of Neurological Disorders and Stroke
<http://www.ninds.nih.gov/>

SafetyLit
<http://www.safetylit.org/>

ThinkFirst National Injury Prevention Foundation
<http://www.thinkfirst.org>