



## OVERVIEW

### BIG IDEA

Injuries are the leading cause of death among youth, yet they are largely preventable.

### OBJECTIVE

**6.5:** Analyze risk factors for unintentional injuries in order to provide safety recommendations.

### AGENDA

1. Leading causes of nonfatal injuries
2. Brainstorming types of injuries
3. CDC Podcast
4. 3E's of Injury Prevention
5. 3E Intervention Planning

### HOMEWORK

Carry out an action plan for the tasks that must be accomplished for your team 3E Injury Prevention Intervention. Prepare to present your work!

## LESSON 6.5

# Unintentional Injuries

### SUMMARY:

Students will work in teams to create an intervention to reduce injuries in their communities, using an approach that focuses on one of the 3E's of injury prevention: education, engineering, or enforcement/enactment. To prepare them for this challenge, they will be immersed in data on the leading causes of death and listen to a CDC podcast interview with a leading scientist who researches injuries.

### STANDARDS:

**NHES 1.12.8:** Analyze personal susceptibility to injury, illness, or death if engaging in unhealthy behaviors.

**NHES 1.12.8:** Analyze potential severity of injury or illness if engaging in unhealthy behaviors.



MODULE 5: RURAL HEALTH

LESSON 5.5

# Preventable Injuries

Obj. 5.5: Analyze risk factors for unintentional injuries in order to provide safety recommendations.



## Leading Causes of Nonfatal Injuries

Use the following chart (see full PDF handout) to answer the questions about causes of injuries.

National Estimates of the 10 Leading Causes of Nonfatal Injuries Treated in Hospital Emergency Departments, United States - 2011

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Unintentional Fall 147,819	Unintentional Fall 980,092	Unintentional Fall 659,063	Unintentional Fall 624,123	Unintentional Struck By/Against 1,039,781	Unintentional Struck By/Against 830,843	Unintentional Fall 795,173	Unintentional Fall 984,995	Unintentional Fall 909,229	Unintentional Fall 2,403,146	Unintentional Fall 9,256,761
2	Unintentional Struck By/Against 35,388	Unintentional Struck By/Against 381,370	Unintentional Struck By/Against 429,506	Unintentional Struck By/Against 615,721	Unintentional Fall 973,968	Unintentional Overexertion 675,342	Unintentional Overexertion 989,259	Unintentional Overexertion 498,178	Unintentional Struck By/Against 260,734	Unintentional Struck By/Against 269,421	Unintentional Struck By/Against 4,619,897
3	Unintentional Other Bite/Sting 15,525	Unintentional Other Bite/Sting 173,697	Unintentional Other Bite/Sting 118,853	Unintentional Struck By/Against 306,379	Unintentional Overexertion 724,410	Unintentional Struck By/Against 656,043	Unintentional Struck By/Against 493,018	Unintentional Struck By/Against 438,778	Unintentional Overexertion 256,738	Unintentional Overexertion 203,047	Unintentional Overexertion 3,440,314
4	Unintentional Foreign Body 11,120	Unintentional Foreign Body 143,838	Unintentional Out/Pierce 116,813	Unintentional Out/Pierce 137,359	Unintentional MV Occupant 703,817	Unintentional MV Occupant 572,542	Unintentional Out/Pierce 412,035	Unintentional Out/Pierce 383,832	Unintentional MV Occupant 236,368	Unintentional MV Occupant 194,678	Unintentional MV Occupant 2,686,589
5	Unintentional Fire/ Burn 10,634	Unintentional Overexertion 94,659	Unintentional Overexertion 86,337	Unintentional Pedal Cyclist 110,225	Other Assault* Struck By/Against 494,128	Unintentional Out/Pierce 402,941	Unintentional Out/Pierce 310,614	Unintentional Other Specified 337,326	Unintentional Out/Pierce 193,449	Unintentional Out/Pierce 146,965	Unintentional Out/Pierce 2,165,207
6	Unintentional Other Specified 10,113	Unintentional Other Specified 93,053	Unintentional Pedal Cyclist 84,581	Unintentional Unknown/Unspecified 89,494	Unintentional Out/Pierce 460,128	Other Assault* Struck By/Against 35,852	Other Assault* Struck By/Against 280,086	Unintentional Out/Pierce 294,914	Unintentional Other Specified 160,776	Unintentional Poisoning 95,841	Unintentional Other Specified 1,816,657
7	Unintentional Out/Pierce 7,754	Unintentional MV Occupant Specified 73,822	Unintentional MV Occupant Specified 63,463	Other Assault* Struck By/Against 79,735	Unintentional Other Specified 326,214	Unintentional Other Specified 305,592	Other Assault* Struck By/Against 219,531	Unintentional Poisoning 277,220	Unintentional Poisoning 115,845	Unintentional Other Bite/Sting 93,856	Other Assault* Struck By/Against 1,421,464
8	Unintentional Inhalation/Suffocation 7,501	Unintentional Fire/ Burn 55,939	Unintentional Foreign Body 59,229	Unintentional MV Occupant 78,610	Unintentional Other Bite/Sting 198,384	Unintentional Other Bite/Sting 198,631	Unintentional Poisoning 169,824	Other Assault* Struck By/Against 174,569	Unintentional Other Bite/Sting 93,876	Unintentional Other Specified 14,573	Unintentional Other Bite/Sting 1,253,696
9	Unintentional Overexertion 5,895	Unintentional Dog Bite 43,516	Unintentional Dog Bite 44,996	Unintentional Other Bite/Sting 67,545	Unintentional Unknown/Unspecified 153,778	Unintentional Poisoning 168,992	Unintentional Other Bite/Sting 135,945	Unintentional Other Bite/Sting 149,297	Unintentional Struck By/Against 58,527	Unintentional Other Specified 66,445	Unintentional Poisoning 991,527
10	Unintentional MV Occupant 5,342	Unintentional Unknown/Unspecified 41,428	Unintentional Other Transport 38,880	Unintentional Other Transport 48,903	Unintentional Poisoning 153,694	Unintentional Unknown/Unspecified 108,184	Unintentional Unknown/Unspecified 89,045	Unintentional Unknown/Unspecified 78,930	Unintentional Other Transport 50,660	Unintentional Unknown/Unspecified 56,754	Unintentional Unknown/Unspecified 703,783

\*The "Other Assault" category includes all assaults that are not classified as sexual assault. It represents the majority of assaults. Data Source: NEISS All Injury Program operated by the Consumer Product Safety Commission (CPSC). Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC using WISQARS™.



1. What is the overall leading cause of nonfatal injuries? \_\_\_\_\_
2. What is the leading cause of nonfatal injuries among 15-24 year olds? \_\_\_\_\_
3. For 15-65+ year olds, in what rank place does "Unintentional MV-Occupant" place? \_\_\_\_ *Note: MV-Occupant stands for Motor Vehicle Occupant*
4. Are bicycle injuries or motor vehicle injuries more common among 5-9 year olds? \_\_\_\_\_
5. What trend do you notice in unintentional poisoning injuries? What do you think is contributing to this trend?
6. The local fire department is starting a campaign to educate people on testing their smoke alarms. For which age groups would this intervention most likely reduce nonfatal injuries?

**DO NOW:** Make copies of the PDF handout (included in lesson resources, "CDC Leading Causes of Death PDF"), so that students can examine the table easily and read the smaller print.

Ask students to explain how the table is organized. Ask them to notice why some types of injuries are color-coded. Ask them to identify examples of each of the types of injuries, especial those that may be confusing (ex: Struck by/Against, MV Occupant, etc.)

### DO NOW ANSWERS:

1. Unintentional Fall
2. Unintentional Struck by/Against
3. 4<sup>th</sup> place
4. Bicycle!!! (pedal-cyclist is #6 vs. MV Occupant--motor vehicle occupant is #)
5. As people get older, unintentional poisonings become a higher and higher ranked cause of injury. Students may not be able to come up with the answer, but may try some guesses. Tell them that they will learn part of the answer later when they listen to a podcast (prescription drug overdose/misuse is on the rise, according to the CDC scientist)
6. Infants (<1) most because it is the 5<sup>th</sup> leading cause of injury; 1-4 year olds as well because it is the 8<sup>th</sup> leading cause of injury for that age group



**Brainstorm**

With a small group, list as many specific examples of types of injuries as you can in the bubble below. You may use the chart from the Do Now exercise to help, but be sure you add more specific injury examples. For example, the category "Unintentional Struck By/Against" might include injuries from sports, playground equipment, and bicycle collisions.



**A Cup of Health with CDC Podcast**

Listen to the Podcast, "What We're Learning About Deaths from Unintentional Injuries," and follow along on the transcript handout. Answer the questions below based on Dr. Moffett's responses.

1. Why do researchers use the term "unintentional injury" instead of "accident?"
2. Give three examples of things that qualify as "unintentional injuries" and one example of something that does not.
3. What is the #1 leading cause of death from unintentional injury? \_\_\_\_\_
4. What is one cause of unintentional injury that is on the rise among adults? \_\_\_\_\_
5. On the individual level, what are two things parents can do to prevent injuries for their children?
6. By how much have unintentional injury rates increased recently? \_\_\_\_%

**DISCUSS:** Consider making it a contest, as many students may be motivated by competition. Challenge them to see how many examples they can think of in 3 minutes.

After students finish brainstorming, ask them to circle the top THREE that they think are MOST COMMON in their community? In all rural communities?

**READ:** Consider playing the Podcast all the way through once while students just listen. Then have them read through the questions and play it again as they work on answering and follow along on the transcript. This will allow students to listen well the first time for pleasure, without the added pressure of writing.

**READ ANSWERS:**

1. The term is important because by labeling these injuries correctly, people will understand that they are often preventable rather than things that happen that we have no control over.
2. Qualifies: housefire, drowning, motor vehicle crashes, bicycle crashes, falls, slips, trips, poisonings; Does not qualify: violent acts
3. #1 -- Motor vehicle crashes
4. Poisonings among adult population (prescription drug abuse/misuse) have risen recently
5. Buckle up their kids and use proper car seats correctly; Keep pools fenced in; Keep medicines and cleaning supplies safe and inaccessible to small children
6. 7% (especially due to elderly falls and poisonings from prescription drug abuse)



**The 3 E's of Injury Prevention**

Review the definitions below, then read about the 3 E's of injury prevention.

*Did you know?*

- Violence and injuries together kill more people ages 1–44 in the U.S. than any other cause (NCIPC: [WISQARS](#))
- Violence and injuries cost more than \$406 billion in medical care and lost productivity each year (Finkelstein EA et al 2006)

**Unintentional injury:** any injury that was unplanned and does not result from intent (as in violence); the most common unintentional injuries result from motor vehicle crashes, falls, fires/ burns, drownings, poisonings, and aspirations

**Injury prevention:** an effort to prevent or reduce the severity of bodily injuries caused by external mechanisms before they occur

Injury prevention strategies are often categorized as the 3 E's: **E**ducation, **E**ngineering modifications, and **E**nforcement/enactment. In the table below, examine some examples related to traffic and automobile safety and then write your own examples for drownings.

3 E's	Traffic & Auto Safety	Drownings
<b>Education</b>	-promote seat belt use -discourage impaired driving -promote child safety seats	
<b>Engineering</b>	-vehicle crash worthiness -seat belts, airbags, locking seat belts for child seats	
<b>Enforcement/enactment</b>	-passage and enforcement of primary seat belt laws, speed limits, impaired driving enforcement	



**3E's Interventions to Reduce Injuries**

**Challenge:** Team up to improve health and safety by reducing unintentional injuries in your community!

**Directions:**

- 1) Choose one type of injury to focus on. Our injury type is: \_\_\_\_\_
- 2) Choose one of the 3 E's. We will approach the problem through: **E** \_\_\_\_\_
- 3) Create an intervention that helps reduce injury. Use the planning table on the next page to work on it together in class. Then assign tasks to finish creating and implementing the intervention for homework.
- 4) Be ready to present your 3E intervention during the next class period.

**NEW INFO:**

Other important RURAL HEALTH statistics related to unintentional injury to share:

1. Although only one-third of all motor vehicle accidents occur in rural areas, two-thirds of the deaths attributed to these accidents occur on rural roads.
2. Rural residents are nearly twice as likely to die from unintentional injuries other than motor vehicle accidents than are urban residents. Rural residents are also at a significantly higher risk of death by gunshot than urban residents.

**SOURCE:** <http://geiselmed.dartmouth.edu/cfm/education/ruralhs4.php>

**NEW INFO: EXAMPLES (DROWNING):**

**Education:** swim classes, water safety classes, lifeguard classes; **Engineering:** fences around pools, lifejackets that are more appealing for kids/teens to wear or safer, warning/alert systems around pools, etc. **Enforcement:** fines for kids left unattended swimming under certain age, clearer signs around pools/waterfront.

**THINK:** Act as a moderator of student requests for specific types of injury (ideally, all students would choose a different type, or there would be enough variety to represent the spectrum of injury). Ensure the following class is feasible for student team presentations to take place, or offer a longer deadline and reserve a future class.



3E's Intervention Planning

Question or Consideration	Ideas & Action Plan
What evidence do you have that your specific type of injury is a problem in your community?	
Why did you choose to target the injury with your chosen method--the "E" you selected?	
Describe your intervention:	
Check to be sure you've addressed the 4 W's:	Who: What: When: Where:
What evidence will you collect to determine if your intervention was successful?	
What tasks do you need to accomplish to create and implement your intervention? <i>(Make a specific list, using team member names, and deadlines)</i>	

**THINK:**

Encourage students to find evidence. If they cannot locate any evidence for their specific state, county or community, they can use national statistics.

Require that students actually collect some type of data to determine how successful their intervention was. This can be simple and informal, but it is an important step. (Examples: Education—give a quick quiz, Engineering—talk to local experts/professionals to get their opinion of how it would work, Enforcement—give a poll about how a new law or policy would be received).



**Risk Factors and Injury Prevention**

For each of the following types of injury, list one risk factor and one preventative strategy.

**1. Childhood poisonings (due to household cleaning products)**

- a. Risk factor:
- b. Preventative strategy:

**2. Burns**

- a. Risk factor:
- b. Preventative strategy:

**3. Motor vehicle crashes**

- a. Risk factor:
- b. Preventative strategy:



**Create Your 3E Intervention:**

Plan your tasks to accomplish to create your injury prevention intervention:

Team Member	Task	Deadline

**ASSESS:**

Possible answers:

Childhood poisonings: RFs: lack of awareness of dangers; improper storage location; unsupervised children; Preventive: educate parents; provide free childproofing devices

Burns: RFs: missing smoke detectors; overcrowded conditions in homes; no fire escape plan; smoking in home; Preventive: free fire alarm outreach/testing, fire education in schools

Motor vehicle crashes: RFs: texting or using cell phone while driving, distracting driving, teen/inexperienced drivers, drinking and driving; Preventive: Enforce laws to make penalties harsher.

**HOMEWORK:** This homework assignment may require a bit more time, so an extended deadline for final completion and presentation of interventions may be helpful for students.