

**Table 10.
Fireground Injuries by Primary Symptom of Injury in January and July, 2010-2014 Annual Averages
(Continued)**

Primary Symptom of Injury - January	Fireground Injuries	
Dislocation	20	1%
Eye trauma, avulsion	20	1%
Vomiting	20	1%
Heat stroke	20	1%
Numbness or tingling, paresthesia	20	1%
Other specified	100	3%
None	40	1%
July total	3,140	100%

Note: These are national estimates of fires and firefighter injuries reported to U.S. municipal fire departments and so exclude firefighter injuries reported only to federal or state agencies or industrial fire brigades. National estimates of total fireground injuries are made based on data reported by fire departments to the NFPA in its Annual Fire Experience Survey. Firefighter detailed casualty information is based on data reported by fire departments participating in NFIRS 5.0. Fireground injuries are rounded to the nearest ten.

Totals may not equal sums because of rounding.

Source: NFIRS and NFPA Fire Experience Survey.

Table 11.
Fireground Injuries by Cause of Injury in January and July, 2010-2014 Annual Averages

Cause of Injury - January	Fireground Injuries	
Slip/trip	620	21%
Exposure to hazard	580	19%
Overexertion or strain	550	18%
Fall	430	14%
Contact with object (firefighter moved into/onto)	400	13%
Unclassified cause	230	7%
Struck or assaulted by person, animal or object	210	7%
Jump	10	0%
January total	3,030	100%
Cause of Injury - July	Fireground Injuries	
Overexertion or strain	1,080	34%
Exposure to hazard	650	21%
Contact with object (firefighter moved into/onto)	370	12%
Slip/trip	300	9%
Unclassified cause	280	9%
Fall	250	8%
Struck or assaulted by person, animal or object	210	7%
Jump	10	0%
July total	3,140	100%

Note: These are national estimates of firefighter injuries reported to U.S. municipal fire departments and so exclude fires and firefighter injuries reported only to federal or state agencies or industrial fire brigades. National estimates of total fireground injuries are made based on data reported by fire departments to the NFPA in its Annual Fire Experience Survey. Firefighter detailed casualty information is based on data reported by fire departments participating in NFIRS 5.0. Fireground injuries are rounded to the nearest ten.

Totals may not equal sums because of rounding.

Source: NFIRS and NFPA Fire Experience Survey.

**Table 12.
Fireground Injuries by Day of Week, 2010-2014 Annual Averages**

Day of Week	Fireground Injuries	
Sunday	4,510	15%
Monday	4,450	15%
Tuesday	4,210	14%
Wednesday	4,230	14%
Thursday	4,270	14%
Friday	4,150	14%
Saturday	4,460	15%
Total	30,290	100%

Note: These are national estimates of firefighter injuries reported to U.S. municipal fire departments and so exclude fires and firefighter injuries reported only to federal or state agencies or industrial fire brigades. National estimates of total fireground injuries are made based on data reported by fire departments to the NFPA in its Annual Fire Experience Survey. Firefighter detailed casualty information is based on data reported by fire departments participating in NFIRS 5.0. Fireground injuries are rounded to the nearest ten.

Totals may not equal sums because of rounding.

Source: NFIRS and NFPA Fire Experience Survey.

**Table 13.
Fireground Injuries by Time of Day, 2010-2014 Annual Averages**

Time of Day	Fireground Injuries	
Midnight- 12:59 a.m.	1,170	4%
1:00-1:59 a.m.	1,160	4%
2:00-2:59 a.m.	1,210	4%
3:00-3:59 a.m.	1,250	4%
4:00-4:59 a.m.	1,080	4%
5:00-5:59 a.m.	920	3%
6:00-6:59 a.m.	870	3%
7:00-7:59 a.m.	830	3%
8:00-8:59 a.m.	990	3%
9:00-9:59 a.m.	1,000	3%
10:00-10:59 a.m.	1,140	4%
11:00-11:59 a.m.	1,290	4%
12:00-12:59 p.m.	1,460	5%
1:00-1:59 p.m.	1,550	5%
2:00-2:59 p.m.	1,730	6%
3:00-3:59 p.m.	1,750	6%
4:00-4:59 p.m.	1,560	5%
5:00-5:59 p.m.	1,560	5%
6:00-6:59 p.m.	1,540	5%
7:00-7:59 p.m.	1,380	5%
8:00-8:59 p.m.	1,320	4%
9:00-9:59 p.m.	1,240	4%
10:00-10:59 p.m.	1,230	4%
11:00-11:59 p.m.	1,050	3%
Total	30,290	100%

Note: These are national estimates of firefighter injuries reported to U.S. municipal fire departments and so exclude firefighter injuries reported only to federal or state agencies or industrial fire brigades. National estimates of total fireground injuries are made based on data reported by fire departments to the NFPA in its Annual Fire Experience Survey. Firefighter detailed casualty information is based on data reported by fire departments participating in NFIRS 5.0. Fireground injuries are rounded to the nearest ten.

Totals may not equal sums because of rounding.

Source: NFIRS and NFPA Fire Experience Survey.

**Table 14.
Fireground Injuries by Age of Victim, 2010-2014 Annual Averages**

Age of Victim	Fireground Injuries	
15-19	440	1%
20-24	2,110	7%
25-29	3,600	12%
30-34	4,190	13%
35-39	4,820	15%
40-44	5,320	17%
45-49	4,50	14%
50-54	3,240	10%
55-59	1,420	5%
60-64	480	2%
65 and older	160	1%
Total	30,290	100%

Note: These are national estimates of firefighter injuries reported to U.S. municipal fire departments and so exclude firefighter injuries reported only to federal or state agencies or industrial fire brigades. National estimates of total fireground injuries are made based on data reported by fire departments to the NFPA in its Annual Fire Experience Survey. Firefighter detailed casualty information is based on data reported by fire departments participating in NFIRS 5.0. Fireground injuries are rounded to the nearest ten.

Totals may not equal sums because of rounding.

Source: NFIRS and NFPA Fire Experience Survey.

**Table 15.
Fireground Injuries by Primary Body Part, 2010-2014 Annual Averages**

Primary Body Part Injured	Fireground Injuries	
Lower extremities	6,620	22%
Knee	2,990	10%
Ankle	1,770	6%
Leg-lower	740	2%
Foot and toes	720	2%
Upper extremities	6,090	20%
Hand and fingers	3,640	12%
Wrist	770	2%
Elbow	670	2%
Lower arm not including elbow or wrist	560	2%
Neck & Shoulders	4,010	13%
Shoulder	2,480	8%
Neck	1,400	4%
Head	3,950	13%
Unclassified head	1,720	5%
Ear	850	3%
Eye	940	3%
Multiple parts	2,380	8%
Multiple body parts - whole body	1,710	5%
Multiple body parts - upper part of body	560	2%
Internal	2,330	8%
Trachea and lungs	1,590	5%
Thorax	2,310	8%
Back, except spine	1,540	5%
Chest	760	2%
Spine	1,070	4%
Abdominal area	990	3%
Hip, lower back or buttocks	640	2%
Unclassified body part	530	2%
Total	30,290	100%

Note: These are national estimates of firefighter injuries reported to U.S. municipal fire departments and so exclude firefighter injuries reported only to federal or state agencies or industrial fire brigades. National estimates of total fireground injuries are made based on data reported by fire departments to the NFPA in its Annual Fire Experience Survey. Firefighter detailed casualty information is based on data reported by fire departments participating in NFIRS 5.0. Fireground injuries are rounded to the nearest ten.

Totals may not equal sums because of rounding.

Source: NFIRS and NFPA Fire Experience Survey.

Appendix A.

How National Estimates Statistics Are Calculated

The statistics in this analysis are estimates derived from the U.S. Fire Administration's (USFA's) National Fire Incident Reporting System (NFIRS) and the National Fire Protection Association's (NFPA's) annual survey of U.S. fire departments. NFIRS is a voluntary system by which participating fire departments report detailed factors about the fires to which they respond. Roughly two-thirds of U.S. fire departments participate, although not all of these departments provide data every year. Fires reported to federal or state fire departments or industrial fire brigades are not included in these estimates.

NFIRS provides the most detailed incident information of any national database not limited to large fires. NFIRS is the only database capable of addressing national patterns for fires of all sizes by specific property use and specific fire cause. NFIRS also captures information on the extent of flame spread, and automatic detection and suppression equipment. For more information about NFIRS visit <http://www.nfirs.fema.gov/>.

NFIRS has a wide variety of data elements and code choices. The NFIRS database contains coded information. Many code choices describe several conditions. These cannot be broken down further. For example, area of origin code 83 captures fires starting in vehicle engine areas, running gear areas or wheel areas. It is impossible to tell the portion of each from the coded data.

Methodology may change slightly from year to year.

NFPA is continually examining its methodology to provide the best possible answers to specific questions, methodological and definitional changes can occur. *Earlier editions of the same report may have used different methodologies to produce the same analysis, meaning that the estimates are not directly comparable from year to year.*

NFPA's fire department experience survey provides estimates of the big picture.

Each year, NFPA conducts an annual survey of fire departments which enables us to capture a summary of fire department experience on a larger scale. Surveys are sent to all municipal departments protecting populations of 50,000 or more and a random sample, stratified by community size, of the smaller departments. Typically, a total of roughly 3,000 surveys are returned, representing about one of every ten U.S. municipal fire departments and about one third of the U.S. population.

The survey is stratified by size of population protected to reduce the uncertainty of the final estimate. Small rural communities have fewer people protected per department and are less likely to respond to the survey. A larger number must be surveyed to obtain an

adequate sample of those departments. (NFPA also makes follow-up calls to a sample of the smaller fire departments that do not respond, to confirm that those that did respond are truly representative of fire departments their size.) On the other hand, large city departments are so few in number and protect such a large proportion of the total U.S. population that it makes sense to survey all of them. Most respond, resulting in excellent precision for their part of the final estimate.

The survey includes the following information: (1) the total number of fire incidents, civilian deaths, and civilian injuries, and the total estimated property damage (in dollars), for each of the major property use classes defined in NFIRS; (2) the number of on-duty firefighter injuries, by type of duty and nature of illness; (3) the number and nature of non-fire incidents; and (4) information on the type of community protected (e.g., county versus township versus city) and the size of the population protected, which is used in the statistical formula for projecting national totals from sample results. The results of the survey are published in the annual report *Fire Loss in the United States*. To download a free copy of the report, visit <http://www.nfpa.org/assets/files/PDF/OS.fireloss.pdf>.

Projecting NFIRS to National Estimates

As noted, NFIRS is a voluntary system. Different states and jurisdictions have different reporting requirements and practices. Participation rates in NFIRS are not necessarily uniform across regions and community sizes, both factors correlated with frequency and severity of fires. This means NFIRS may be susceptible to systematic biases. No one at present can quantify the size of these deviations from the ideal, representative sample, so no one can say with confidence that they are or are not serious problems. But there is enough reason for concern so that a second database -- the NFPA survey -- is needed to project NFIRS to national estimates and to project different parts of NFIRS separately. This multiple calibration approach makes use of the annual NFPA survey where its statistical design advantages are strongest.

In this analysis, only data originally collected in NFIRS 5.0 is included in the calculations of the 2010-2014 national estimates for firefighter injuries in structure fires. The portion of fires and firefighter injuries originally collected in NFIRS 5.0 compared to the earlier NFIRS 4.1 version has increased steadily over time. The percent of fires coded in version 5.0 for the 2010 to 2014 period ranged from 97% to 100%.

This update for 2010-14 includes injuries that occurred at all fires (incident type 110-171), at the fireground (where injury occurred codes 5 and 6), and severity of injury (1 to 5). The analysis in this report is based on 24,522 injuries that met these criteria. Except where otherwise noted, all tables are based on fireground injuries that occurred at all fires. The national annual estimates of firefighter injuries were weighted for the

individual years using total fireground injuries from the annual NFPA Fire Experience Survey.

In this report, unknown data was assumed to have the same proportional distribution as the distribution where the data was known. The “Other” category includes cases specifically coded as “other” and cases coded in specific categories but with very low frequency. Note that the number of occurrences for fires has been rounded to the nearest hundred, the number of firefighter fireground injuries has been rounded to the nearest ten, and percentages are rounded to the nearest whole percent. Totals in tables may not equal sums due to rounding.