

Background

Burns represent 13% of injuries sustained by firefighters annually. Most are minor and do not significantly affect the ability to work in full capacity, but there exists potential for both short and long-term incapacitation. Return to work earlier than is medically advisable may increase risk for reinjury.

Existing literature aims to define the scope and impact of firefighter injury but does not adequately address the complex factors affecting firefighters' decisions to return to work.

Methods

A cross-sectional survey was distributed via email to members of a statewide Professional Firefighters' Union. A multiple-choice format was used to assess demographics, injury details, medical care received and return to work. Free text format allowed for elaboration on decisions to return to work. Survey answers were collected and tabulated in REDCap. Narrative answers were evaluated for common themes.

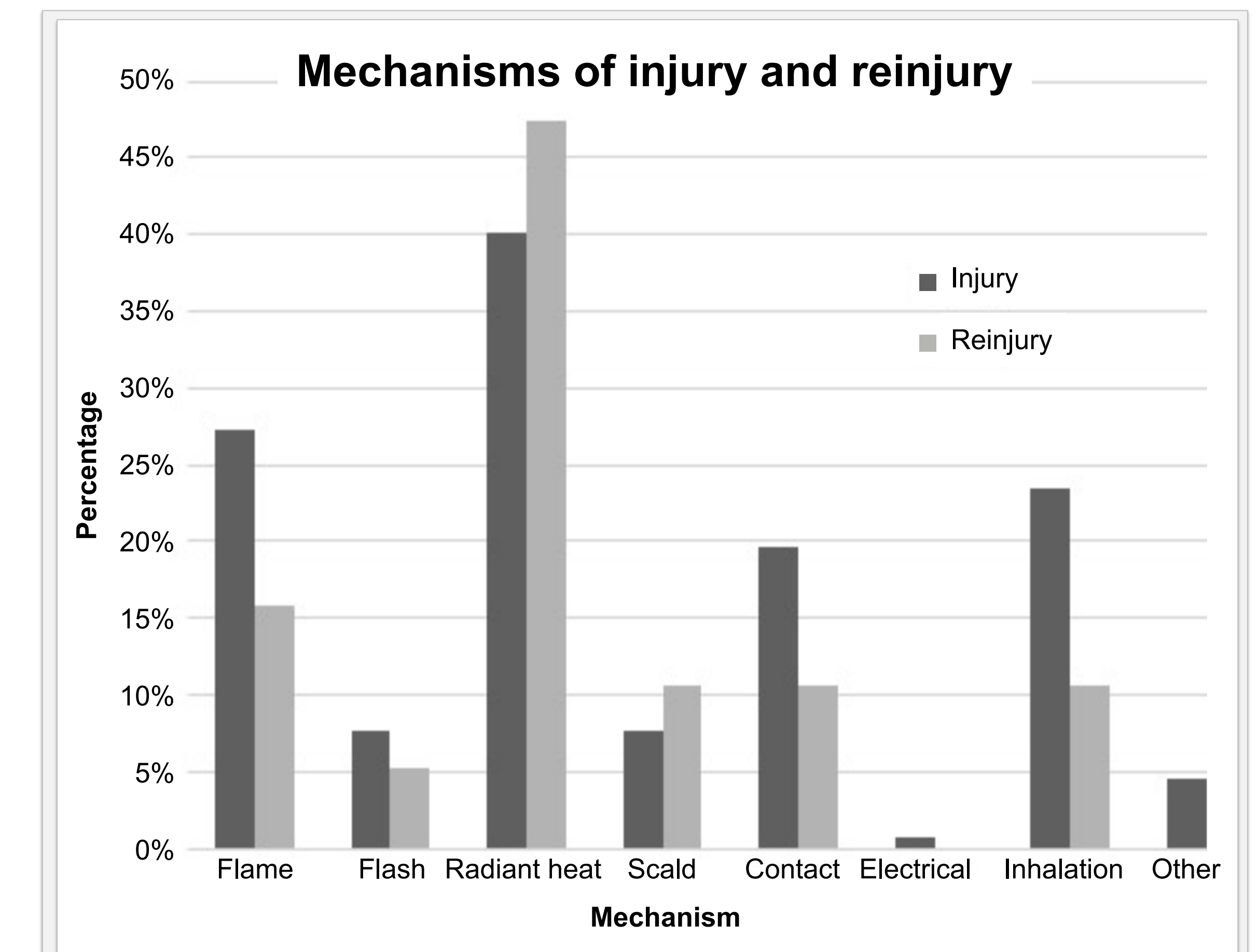
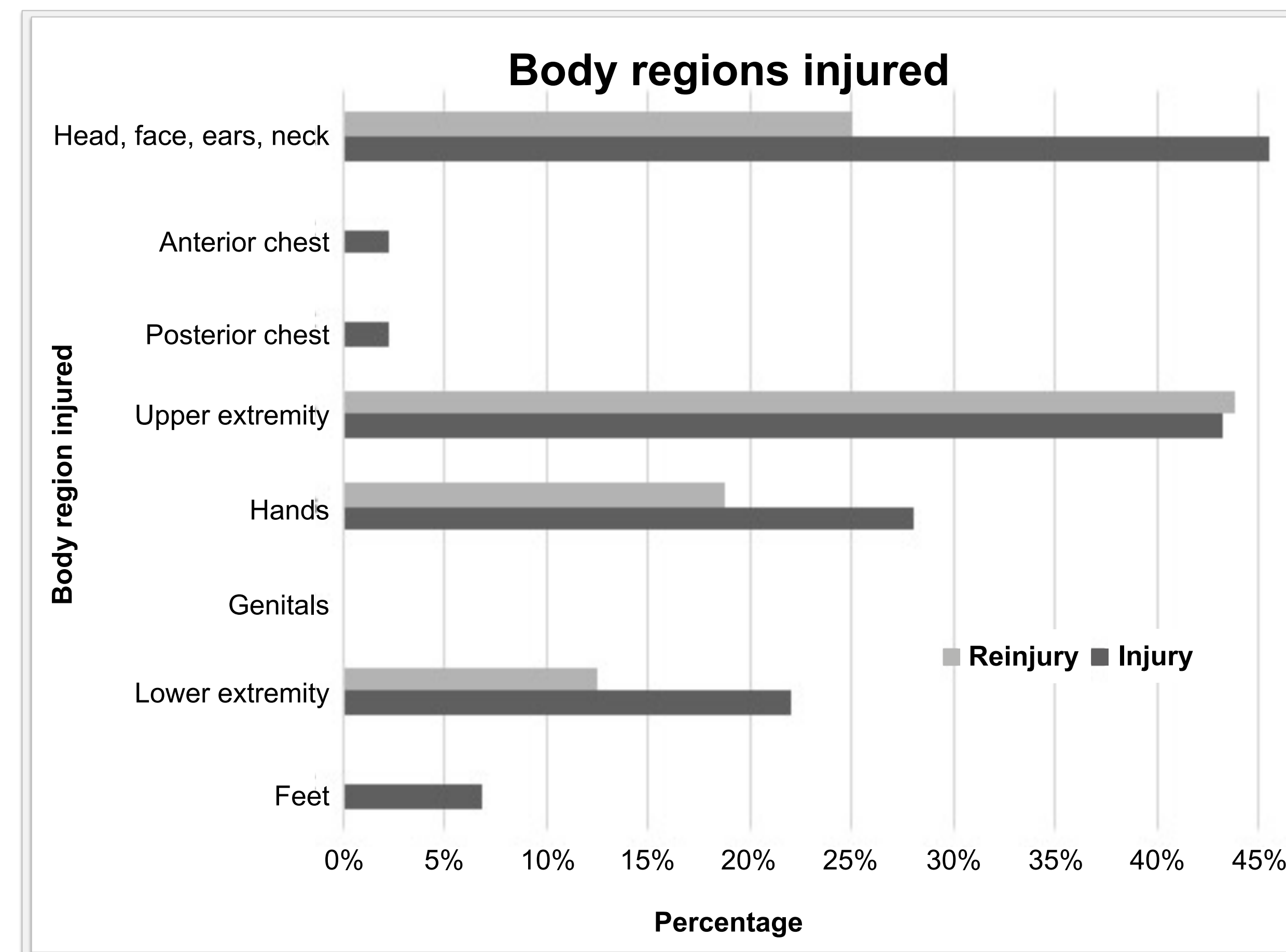
Study Population

- 30,000 surveys distributed
- 413 surveys completed (1.4% response rate)
- 354 with complete data for analysis

Variable	All (n = 354)	Burned (n = 132)	Re-injured (n = 16)
Age (years)			
18-25	6 (1.9%)	0	0
26-35	64 (19.8%)	12 (11.8%)	1 (6.3%)
36-45	83 (25.7%)	16 (15.7%)	1 (6.3%)
46-55	105 (32.5%)	39 (38.2%)	8 (50.0%)
56-65	45 (13.9%)	24 (23.5%)	5 (31.3%)
66-75	15 (4.6%)	9 (8.8%)	1 (6.3%)
> 75	5 (1.5%)	2 (2.0%)	0
Male gender	304 (94.1%)	94 (91.3%)	15 (83.8%)
Caucasian, non-Hispanic	250 (77.4%)	85 (83.3%)	11 (68.8%)
Years as a firefighter			
< 1	5 (1.4%)	0	0
1-3	11 (3.1%)	2 (1.9%)	0
3-5	14 (4.0%)	3 (2.9%)	0
5-10	30 (8.5%)	5 (4.9%)	1 (6.3%)
10-20	108 (30.5%)	25 (24.3%)	2 (12.5%)
> 20	157 (44.4%)	68 (66.0%)	13 (81.3%)

- 132 (37.3%) burned during course of career
- 16 (12.1%) with at least one reinjury

Results



- The most frequently burned sites were in the head region (inclusive of injuries to the face, ears and neck) and upper extremities. Primary mechanisms of injury were radiant heat and flame. 90.7% wore protective gear at time of injury, but only 77.1% wore all protective gear properly
- Burns were primarily superficial and deep partial thickness. Total body surface area involvement ranged 0-36%, however all except two cases were small ($\leq 10\%$).
- After injury, 32 returned immediately to light duty, while 26 returned immediately to full capacity. Most not returning immediately were able to transition back to work within three months. Lasting disabilities were noted by 12 (11.8%).
- More than half did not receive any care at a Burn Center, and one quarter received information on risks and consequences of reinjury.

Of the injured firefighters, 12 (9.1%) acknowledged early return to work.

Of all respondents, 170 (48.0%) knew someone they felt returned to work prematurely.

Multiple internal and external factors contributing to decisions regarding returning to work:

- Loss of income or health insurance
- Difficulties with workers' compensation
- Lack of knowledge about risks of reinjury
- Underestimation of severity of injury, both physical and psychological
- Pressure from employers and coworkers
- Peer pressure
- Pressure from family and others
- Lack of satisfaction with light duty
- Culture of pride, ego, toughing it out
- Missing the thrill of the job and camaraderie
- Need to be out there helping others

Conclusions

Burns account for the majority of firefighter morbidity and mortality as well as delayed or inability to return to work.

Targeted education and outreach may help diminish internal and external pressures contributing to premature return to work.

Additional research regarding firefighter injury is warranted and may best be accomplished by encouraging partnerships and increasing engagement between the firefighter community and surrounding Burn Centers.