

KEY FINDINGS

New Firefighters

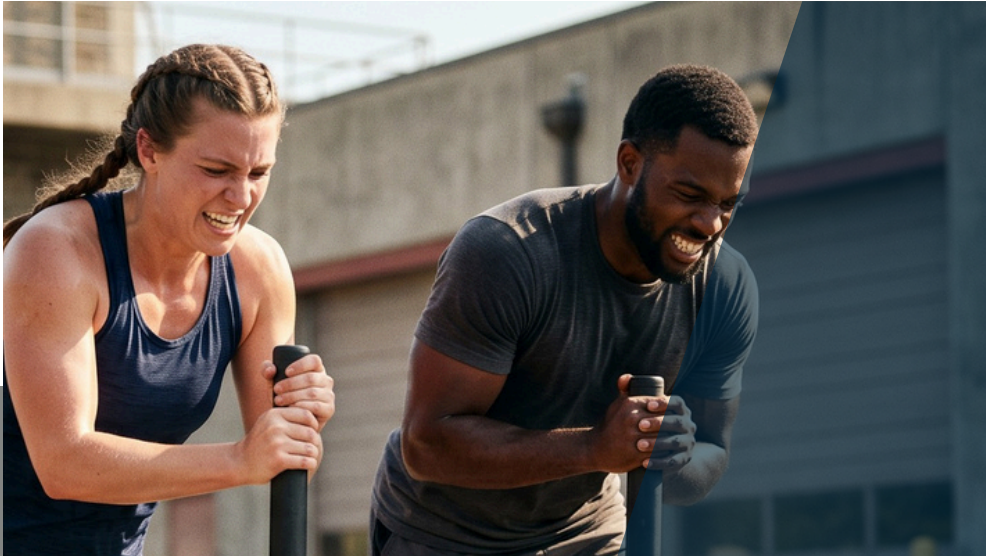
- In 2012, the 1.1 million U.S. firefighters suffered an estimated 69,400 on-duty injuries
- 65.4% of recruit injuries were sprains and strains — with acute overexertion the most common mechanism
- Failed fitness programs waste budget, discourage crews, and make the next initiative harder to implement

How the Study Was Done

- Evaluated a Probationary Firefighter Fitness (PFF-Fit) program
- 2012 recruit class received structured functional fitness training 3 days/week plus peer fitness trainer mentorship through the probationary year
- Compared to historical control classes from 2007, 2008, and 2009
- Measured injury frequency, workers' compensation claims, and return on investment

What's At Stake

- The intervention class experienced significantly fewer overall injuries and fewer injuries during the probationary year
- Workers' compensation claims costs were 13% lower
- The program cost \$32,192 and saved approximately \$33,000 in claims costs — a positive return on investment in year one



Evaluation of a Fitness Intervention for New Firefighters: Injury Reduction and Economic Benefits

SUMMARY:

Why This Matters to You

Most firefighter fitness research tells you what's wrong. This study shows what actually works — and what it's worth. Researchers evaluated a structured fitness program for new recruits at Tucson Fire Department, comparing injury and workers' compensation outcomes against three historical recruit classes. The result: fewer injuries, lower claims costs, and a positive financial return in the first year alone.

A Fitness Program That Worked: What the Outcomes Showed

FINDINGS:

The Most Important Things to Know

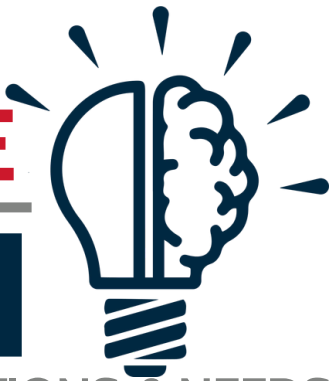
- Structured fitness training reduced overall injuries significantly: The 2012 intervention class experienced significantly fewer injuries overall and during the probationary year compared to historical controls — with an overall injury rate of 0.44 versus 0.87 for controls.
- Workers' compensation claims dropped 30%: The intervention class filed 30% fewer claims than controls and had a mean cost per claim of \$513 versus \$1,737 for controls — a reduction of \$1,224 per claim.
- The program paid for itself in year one: Implementation cost \$32,192. Estimated claims cost savings were approximately \$33,000 — yielding a positive return on investment of 2.4% in the first year, before any downstream career benefits are counted.
- Functional training built for firefighting made the difference: The program used job-specific movements — hose pulling, axe swings, core work — rather than generic exercise. Peer fitness trainers then mentored probationary firefighters through their first year on shift.

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CONDITIONS, ACTIONS, & NEEDS

Big Picture: What Actually Works

FIRE STATION TALKS

- Fitness programs work when they're structured, functional, and sustained. The PFF-Fit program used certified peer fitness trainers, job-specific movements, and mentorship through the probationary year — not just a gym requirement during the academy.
- The probationary year is when injury patterns get established. 59% of the control class injuries in one year occurred during the probationary period — not the academy. A fitness program that ends at graduation misses the highest-risk window.
- Fitness investment has a measurable financial return. The program cost \$32,192 and saved \$33,000 in workers' compensation costs in year one alone — before accounting for reduced lost time, backfill costs, or long-term career injury reduction.
- Peer fitness trainers are the delivery mechanism that works. Certified firefighter peers who design workouts, conduct assessments, and mentor probationary members on shift produce better outcomes than external programs or self-directed training.



Key Actions: Build Programs That Last

TAKEAWAYS

- If you're new, take your fitness program seriously from day one. The probationary year carries the highest injury risk of your career.
- Train for the job, not the test. The PFF-Fit program integrated movements directly from emergency response — hose pulling, axe swings, loaded carries. Job-specific functional fitness builds readiness and reduces injury more effectively than generic programming.
- Find your peer fitness trainer — or become one. Certified peer fitness trainers were the key implementation mechanism in this study. If your department has them, use them. If it doesn't, becoming one is one of the highest-impact contributions you can make to your crew's health.

Data Sources:

GRIFFIN, S.C., REGAN, T.L., HARBER, P., LUTZ, E.A., HU, C., PEATE, W.F., & BURGESS, J.L. (2016). EVALUATION OF A FITNESS INTERVENTION FOR NEW FIREFIGHTERS: INJURY REDUCTION AND ECONOMIC BENEFITS. *INJURY PREVENTION*, 22, 181-188.

What Chiefs Can Do: About Recruit Fitness

TAKING THE LEAD

- Build a structured fitness program that extends through the probationary year. PFF-Fit's peer mentorship through the probationary year was central to its injury reduction outcomes.
- Train and certify peer fitness trainers. The PFF-Fit program used ACE-certified firefighter peers to design and deliver programming.
- Use functional, job-specific movements — not generic gym programming. Workouts built around the actual physical demands of firefighting — pulling, pushing, carrying, swinging — build the specific fitness qualities that reduce fireground injury.
- Make the financial case for fitness investment. This program returned more than it cost in year one. Workers' compensation savings, reduced lost time, and lower backfill costs are measurable.
- Track recruit injury rates as a program outcome measure. Injury frequency and workers' compensation claims are the metrics that demonstrate program effectiveness to leadership and justify continued investment over time.
- Include nutrition support in your recruit program. The PFF-Fit program included a registered dietician component. Nutrition and fitness together produce better outcomes than fitness alone.

Conclusion

STRUCTURED FITNESS PROGRAMS WORK — AND THEY PAY FOR THEMSELVES. THE PFF-FIT PROGRAM REDUCED INJURIES, CUT WORKERS' COMPENSATION CLAIMS BY 30%, AND RETURNED A PROFIT IN YEAR ONE. FUNCTIONAL TRAINING, PEER FITNESS TRAINERS, AND SUSTAINED MENTORSHIP THROUGH THE PROBATIONARY YEAR ARE THE FORMULA. THE BEST TIME TO BUILD A FITNESS CULTURE IS AT THE START OF A CAREER — AND THE BEST STRATEGY FOR SUCCESS IS ONE THAT NEVER STOPS.

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