

Safety and the Athletic Trainer

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AT Emergence in the Occupational Setting:

More than 50,000 athletic trainers engage in many diverse industries across the United States. From professional sports, secondary schools, hospitals, clinics, to the military, and heavy industry, these health care professionals are treating musculoskeletal disorders and reducing health care costs. With a specialty in the musculoskeletal system and biomechanics, athletic trainers have been an essential fixture on the sidelines of athletic events



dating back to the late 19th century. However, it wasn't until the late 1970s with the recognition of Macroergonomics that more health care professionals like athletic trainers began serving the industrial athlete.

Innovative Work Practices:

With the emergence of the desktop computer and other breakthroughs in technology, methods were established to improve safety performance, reduce lost-time incidents, and decrease workplace litigation.¹ Macroergonomics are interventions to achieve these goals. The methods associated with Macroergonomics opened doors for athletic trainers to work closely with safety teams. A key application of Macroergonomics is the Cognitive Walk-through Method. This focuses on inspection in which evaluators can apply user perspective to task scenarios to identify design problems.¹ In other words, inspection of how workers interact with equipment. With the knowledge athletic trainers possess in musculoskeletal injuries, biomechanics, and anatomy, it paves the way for a permanent role identifying risk management interventions and tends to the needs of the industrial athlete.

The Industrial Athlete:

Picture an innovative approach to preventing and managing workplace injuries. What do athletics and an assembly line have in common? Both require physically demanding tasks which fatigue muscles. Both demonstrate repetitive mechanics which contribute to inflammation to joints and tendons. Both require a physical reliance from one's body to perform a task. Now picture a Fortune 500 company that recognizes this and utilizes techniques which mirrors a sports medicine approach to reducing injuries in the workplace. This was a concept Boeing

adopted in 2005 with the purposes of treating early symptoms of discomfort, prevent the incidence of occupational injuries and work-related time loss, and return injured employees back to work sooner, utilizing work hardening methods.



The program included implementation of athletic trainers which focused on means to assess and resolve early symptoms and educate employees on self-care techniques to avoid future symptom progression or injury.² Within the occupational setting, athletic trainers utilize first aid techniques such as ice, tape, and forms of manual therapy to reduce the onset of discomfort. At Boeing, data was recorded based on visits in which recommendations were provided based off symptoms. Data collection is vital for development of an industrial athlete model, and as this case, produced favorable results regarding early interventions.

Over a decade earlier, General Motors utilized athletic trainers at several of their facilities in Michigan. Data collection focusing on cost saving was an integral part of assessing the value of the industrial medicine program. At GM's Saginaw division, circa 1991, it was reported that onsite athletic trainer interventions saved the company \$3,531,335 over a 3-year period, averaging roughly \$1.2 million per year.³ The majority of costs saved was in providing in-house rehabilitation versus outsource care, which can cost employers as much as \$29,000 per injury.³

As cost avoidance is a major benefit to the utilization of athletic trainers within the industrial setting, pioneering programs stick out as creating trailblazing impacts to safety departments and industry.

A Closer Look:

The Fairfax County Police Department has provided athletic trainers for several years. Organized and developed by hall of fame athletic trainer, Nancy Burke, athletic training services are offered to academy cadets and employees. Based off the needs of the academy and officer shifts, the athletic trainer is available on call and has had a great impact on injuries. Data collected indicated that utilizing an athletic trainer within the academy has reduced medical costs by 49.9 percent and musculoskeletal costs by 86.3%.⁴ As reported by the Fairfax County Police Department, the overall medical costs have decreased by 22.05 percent, which includes a reduction in lost-time in duty and non-duty injuries.

NASA has been utilizing onsite athletic trainers since 1997. With the free access to onsite care, reducing travel time to rehab, employees can report to the clinic while at work, increasing job productivity. NASA has calculated an average weighted hourly salary to be \$63, which translated to a weighted salary loss of \$252 per off-site rehab appointment⁴.

Furthermore, as seen with a nationwide, fortune 500 power distribution and utilities company, 2018 metrics break down the extensive cost savings two athletic trainers recorded by utilizing a standard set of criteria. The data collected and processed only focuses on the injuries that, without a doubt, the onsite athletic trainer prevented based on several different factors:

1. Early reporting – The employee’s identification of discomfort and the steps performed on their own to utilize the service of the onsite athletic trainer.
2. Discomfort which impacted the employee at work – Documented discomfort affecting the employee’s work.
3. Program development – Documented progress through a work conditioning program which the employee participated in voluntarily.
4. No interaction from a doctor or other medical professional.
5. Relief of discomfort or symptoms – Documented relief of discomfort which are correlated with the techniques and program implemented by the onsite athletic trainer. This includes, but not limited to: Improvements in range of motion, flexibility, and strength
6. Feedback from the employee – Documented feedback from the employee correlating interventions performed by the onsite athletic trainer to relief of symptoms and the resolution of discomfort without seeing an outside medical provider.

Injury Avoided	Cost Breakdown per 1 injury based on the National Council of Compensation Insurance	2018 Total Number seen by onsite ATC	2018 Cost Avoidance
Sprain	\$64,675.00 – damaged ligaments	11	\$711,425.00
Inflammation	\$81,935.00 – chronic arthritis	16	\$1,310,960.00
Strain	\$69,213.00 – damaged muscle tissue	20	\$1,384,260.00
Contusion	\$58,071.00 – damaged tissue resulting from contact	3	\$174,213.00
CTS	\$64,852.00 – inflammation compressing nerves in wrist	1	\$64,852.00
Injury avoidance claim total		51 Injury claims avoided	\$3,645,710.00
Other	Includes cost-saving interventions discussed in the onsite ATC Service Section. Cost-Savings interventions include: discomfort assessments, onsite injury preventions sessions, and ergonomic assessment. Cost varies based off local CPT Codes	1,384	\$460,949.24

Total 2018 metrics and cost-savings	1,435	\$4,106,659.24
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**ROI –
2,000%**

Conclusion:

The athletic trainer has proven time and time again of their effectiveness in the occupational setting. Through important data collection on injury rates and cost savings has provided safety departments a valuable resource. To utilize the cost savings techniques highlighted in this document, visit [OSHA Safety Pays Program](#). A consideration regarding the OSHA Safety Pays Program:

“The data reflects the average cost of lost time workers' compensation insurance claims derived from unit statistical reports submitted to NCCI for policy years 2013-2015. NCCI makes no guarantees nor assumes any responsibility for the accuracy of or any results obtained through the use of the NCCI data provided through this tool. NCCI's information and data may not be used or copied in any manner except as provided in conjunction with the OSHA website tool, "Safety Pays." Information entered into the form fields is not captured by OSHA.”⁵

About the Author:



Scott Mullett is the founder and owner of AT Efficiency. Scott received both his bachelor's and master's degrees from Kent State University. Scott has worked in the secondary school setting, and currently holds a position within the industrial/occupational sector. Scott's goal is to advocate the value of the athletic trainer in all settings.

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¹ Kleiner, B. M. (1999). Macroergonomic Analysis and Design for Improved Safety and Quality Performance. *INTERNATIONAL JOURNAL OF OCCUPATIONAL SAFETY AND ERGONOMICS*, 5(2), 217–245.

² Basu, S., Wechsler, L. S., Smith, D. R., Towler, C. D., Curley, C. M., Rogers, K., & Hermans, T. L. (2016). Industrial Athlete: Implementation and Effectiveness of a Multifaceted Program for the Prevention of Occupational Injury. *Boeing Technical Journal*.

³ Zimmerman, G. R. (1993). Industrial Medicine and Athletic Training: Cost-Effectiveness in the Non-traditional Setting. *Journal of Athletic Training*, 28(2), 131–135.

⁴ Smith, S. (2014, November 6). Can Our “Workplace Athletes” Benefit from Athletic Trainers? Retrieved from <https://www.ehstoday.com/health/can-our-workplace-athletes-benefit-athletic-trainers>.

⁵ OSHA Safety Pays Program. (n.d.). Retrieved from <https://www.osha.gov/dcsp/smallbusiness/safetypays/estimator.html>.