



# O2X Human Performance

**Building healthier, safer communities  
and saving the lives of firefighters**

**03/24/2017**

**By O2X**

What is O2X? O2X Human Performance is a revolutionary training and education program that is saving lives and building healthier, safer communities. Our core focus is to help firefighters and other tactical athletes improve their physical and mental readiness and increase their productivity. Put simply, O2X provides tactical athletes and elite organizations the tools they need to overcome the unique, job-related challenges they face while keeping their communities safe.

Our mission is to provide science-backed, comprehensive training and education so that tactical athletes can finish their careers as strong as they start. The O2X Human Performance program is built on five pillars: conditioning, nutrition, sleep, stress mitigation, and resiliency development. Together, these pillars make up our Eat. Sweat. Thrive. methodology.

Our program helps ensure that tactical athletes enjoy the healthy retirement years they work so hard to earn. The O2X tailored curriculum offers a systematic approach to making small, incremental improvements that lead to sustainable lifestyle changes and maximize performance in all phases of life, on and off the job.

# O2X Human Performance Key Terms Defined

To fully grasp the profound impact of O2X, it is important to define two terms critical to our mission and method: tactical athlete and human performance. Simply put, a tactical athlete is someone who encounters heightened levels of both mental and physical stress on a daily basis. This includes firefighters who must constantly be ready to jump into action when the alarm bell rings or first responders who regularly handle emotionally taxing, intense calls. Tactical athletes are those whose profession requires hyper focus, situational awareness, and attention to detail while simultaneously demanding physical strength and fitness.

According to Joe Murphy, a member of the O2X team, tactical athletes (firefighters, first responders, and military officers) face job-related challenges that require “a combination of mental, physical, and emotional preparedness.” The O2X team saw a large, unmet need for comprehensive training and education focused on maximizing the performance of tactical athletes that would enable them to thrive on and off the job.

To O2X, human performance is a combination of the mental and physical components required to complete daily tasks in work and life. A variety of training programs focus on the physical training necessary to reach peak athletic performance or specifically address the mental conditioning needed to perform under pressure in stressful situations. Unlike any other program, O2X focuses equal attention on both the mental and physical components of training to develop all-around tactical performance.

Beyond physical fitness, tactical performance includes cognitive function, reaction time, stress management, and the ability to overcome adversity to come back stronger each day. O2X tackles performance not only on the job but also as it impacts daily life for tactical athletes and their families. Human performance goes well beyond the confines of the work environment to also encompass family life.

More than a fitness program, our curriculum includes education on heavy-hitting but very real issues like signs and symptoms of depression and how to mitigate the impact of regularly dealing with stressful situations for both firefighters and their families. Maximizing human performance for tactical athletes requires strengthening each one of the five pillars covered in the O2X curriculum and mentioned earlier.

O2X experts provide a multidisciplinary, holistic approach to human performance that improves the overall well-being of tactical athletes. The Eat. Sweat. Thrive. methodology has helped thousands of firefighters maximize their human performance by providing concrete, science-backed ways to deal with the complex stress they encounter daily.

## **The O2X Human Performance Team**

The O2X team is comprised of veterans of United States/United Kingdom special operations teams, collegiate and Olympic-level athletes, and ultramarathoners who have a passion for healthy living and the undying pursuit of helping others push beyond their limits to #RiseHigher every day. In addition to our cofounders and business team, the O2X family also includes 30-plus human performance specialists who provide the latest cutting-edge science and research in each of the primary fields of health and wellness.

Our specialists include experts at the front of groundbreaking research in their areas of study including leaders like Maria Trozzi, resilience expert and assistant professor of pediatrics at Boston (MA) University School of Medicine; Dr. Maria Urso, nutrition specialist and research scientist; and Mike Sanders, strength and conditioning coach with more than 15 years of experience training Division I and tactical athletes for sport and combat.

O2X experts provide training that goes beyond simply measuring and improving physical fitness for job-related performance. We do not aspire to turn every firefighter into a world-class athlete; instead, our mission is to ensure that firefighters receive comprehensive human performance education to overcome heightened levels of mental and physical stress so they are better equipped to achieve peak performance at work and enjoy their off-duty time.

Our O2X human performance specialists deliver the Eat. Sweat. Thrive. curriculum via classroom-style workshops, hands-on demonstrations, and physical training. Additionally, we provide ongoing online education, delivered daily to participants, including customized workouts, nutrition information, stress mitigation techniques, and tips to improve overall health.

## **Customizing Training for Firefighters**

While our Eat. Sweat. Thrive. curriculum applies to tactical athletes of any kind, we recognize that firefighters face unique hazards. As a result, we felt it was critical to customize workshops to meet the specific needs of fire departments.

Edward Kelly, general secretary-treasurer of the International Association of Fire Fighters, said, “I cannot adequately put into words the profound impact of O2X’s efforts. They are saving the lives of our members here in Massachusetts.”

Firefighters, more than other tactical athletes, face severely elevated risks of cancer, cardiac disease, orthopedic injury, and incidences of post-traumatic stress disorder (PTSD). O2X knows that we can do better than simply accepting the dangers of the job. We work to minimize the distinct risks of firefighting through training and education that benefit firefighters, their families, fire departments, and local communities.

Based on statistics, surveys, and interviews, the O2X team derived in-depth knowledge of the daily realities of working as a firefighter. From this, we developed our customized, science-backed curriculum to help combat the specific dangers that threaten the health and well-being of the firefighter population.

Our Eat. Sweat. Thrive. methodology addresses the heightened stress levels, work/life balance issues, high-risk activities, and disproportionate rate of job-related injuries that have long been an accepted part of the day-to-day lives of firefighters. Understanding and subsequently offering tailored training programs that cater to the unique demands of firefighting are already showing results.

The Boston (MA) Fire Department (BFD) experienced significant performance improvements based on the cultural enhancements derived from the O2X program. Because of the positive and quantifiable results, which will be highlighted later, O2X now delivers its tailored human performance curriculum to fire recruits during the first week of each training class at the Boston Fire Academy. Now, all future Boston firefighters will receive our cutting-edge human performance education so that they can start and finish their careers strong.

## **Assessment, Workshop, and Ongoing Education Curriculum**

Each of the O2X pillars covers a variety of topics that we have curated into a program designed to save the lives of tactical athletes. Our teaching method goes far beyond a standard lecture format, and our specialists bring trailblazing science to life in relatable ways to create a meaningful impact on participants with diverse backgrounds and needs.

Rather than providing generalized information, a fundamental component of our training program is having every workshop participant complete the proprietary

O2X Human Performance Assessment. By asking targeted, thoughtful questions on a variety of topics, we are able to provide recommendations to firefighters and fire departments about how to implement small, meaningful changes that will impact both individuals and entire teams.

*Conditioning:* Beginning with conditioning, the O2X workshop focuses on individual physical fitness and performance as a team. Firefighters do not work alone; as a result, how each member of the team contributes to the task at hand is of utmost importance. When people think of physical training, they often associate “progress” with workouts that leave you sweaty and sore; however, at O2X we know that maintaining peak physical performance for firefighters often revolves around conditioning plans with a significant focus on injury prevention techniques.

Preventing injuries so that firefighters can have life-long careers is something we take very seriously. O2X specialists like Antigone Matsakis, a movement expert who works with top-tier college athletes, provide hands-on education and in-depth information on injury prevention.

Interestingly, many believe that the feeling of pain instantly signals that the body is injured. Matsakis explains that pain is not a signal of immediate damage but rather a warning sign that can help protect the body from sustaining injury. In fact, feeling pain is a natural response to a potential threat or impending risk. This knowledge helps firefighters understand the often-hidden factors that cause injury so they can remain injury free and operate safely in stressful situations.

Along with physical conditioning and injury prevention, O2X recognizes that providing firefighters with education surrounding work-related risks like cancer and cardiac health is mission critical. Firefighters across the globe face elevated rates of cancer of the brain, lungs, colon, and prostate. As part of the O2X workshops, we encourage firefighters to undergo regular cancer screenings and offer the best ways to minimize cancer risks through daily routines like exercise and healthy eating habits.

*Nutrition:* Nutrition is another high-profile topic covered in an unconventional way by the O2X team. Yes, our chefs provide great recipes, but they do much more than offer healthy options. They give detailed insight into how ingredients can impact performance in a way that makes implementing dietary changes realistic and sustainable for firefighters and their families.

Dr. Maria Urso often dispels common weight loss myths. A PhD and published research scientist, Urso once entered a workshop by saying, “Actually guys, the secret to losing weight isn’t just exercise anymore.” After a short pause, a chief with more than 20 years of experience blurted out, “Well this is fantastic news.”

Laughter erupted and Urso went on to provide meaningful and realistic suggestions about how the firefighters can eat healthier so they can achieve their goals and be better prepared for the job.

Mental performance includes several key topics like sleep, breathing, and stress mitigation. Like physical fitness, mental conditioning is critical to maximizing performance, and it can be developed and trained as a skillset.

During an O2X workshop, participants test their alertness, focus, and psychomotor speed with the same techniques used by NASA. In addition, they have access to tools that measure heart rate variability, which shows how stress mitigation exercises impact and improve mental readiness and performance.

*Sleep:* O2X specialists share the most up-to-date tips on getting restful sleep, which improves cognitive function and reaction time and allows firefighters to stay alert despite disruptive sleep schedules. In a session with sleep specialist Annie Okerlin, firefighters learn techniques that can help them get the rest they need to maintain focus when they are called to action at a moment's notice.

Breathing is another basic function that has immense impact on performance. Because we breathe without consciously thinking about it, we do not often take the time to develop it as a skill to help us perform at our peak. O2X specialists teach firefighters how breathing techniques can mitigate stress and return the body to homeostasis (a kind of mental and physical equilibrium). Firefighters also learn that progressive muscle relaxation is another tool to bring the body back down to a relaxed state after experiencing high levels of stress.

*Resiliency development:* Resilience is one of the most complex segments O2X covers. We define resilience as the capacity to withstand stress and adversity and rebound stronger than before. In our team's experiences as members of military special operations teams and extreme athletes, resilience was crucial to maintaining peak performance through adversity. It is also vital to tactical athletes, and it is our duty to provide the latest in resilience research to our participants.

Gregory J. Mackin, the deputy chief of the BFD, recalls: "The O2X team also put on a resilience seminar with world-class speakers who engaged the crowd from beginning to end. Difficult subjects such as depression, suicide, addiction, and PTSD were covered. It was an overwhelming success, with multiple people requesting to follow up with support groups after the seminar."

*Stress mitigation:* It is tough for people to focus and perform under high doses of stress, but that is exactly what firefighters are required to do each day they are on the job. As a result, O2X educates tactical athletes on how to cope with a variety of stressors so they can rebound efficiently and effectively from tense situations.

The list of techniques and topics covered in the O2X Human Performance program is extensive, well beyond what we can provide here. With that in mind, we offer participants access to online resources including daily recipes, workouts, and mental performance tips through our online participant portal and email notifications.

What we know is that providing education and training based on our Eat. Sweat. Thrive. methodology is creating clear results and helping firefighters implement small, incremental improvements that lead to maximized performance through sustainable lifestyle changes.

## Proven Results for Firefighters

O2X launched its first firefighter training program with the BFD, the nation's oldest fire department, in 2015. To date, O2X has trained more than 700 members of the BFD at our in-person workshops and more than 1,500 other firefighters through our online program. We were also working firefighters in about 50 different cities around the country, with workshops coming soon to Washington, D.C., and Broward County, Florida.

O2X Human Performance quickly created quantifiably dramatic improvements in the health and well-being of Boston firefighters, according to data recorded by the BFD before and after 2015 and 2016 training sessions at the Boston Fire Academy.

Firefighters were measured in several key indicators of physical performance at the start of the program and then again 16 weeks later after absorbing O2X methodology. The performance data were independently recorded by the BFD. Following our 2015 training, 100 percent of firefighters in the program improved their ability to do push-ups and bodyweight squats; 85 percent ran 1.5 miles faster; 88 percent improved their planking ability; and 97 percent could do more pull-ups.

The 2016 training period produced similar results: Again, 100 percent of the firefighters in the program improved their ability do bodyweight squats; 93 percent ran faster; 95 percent could plank longer; and 97 percent improved their ability to do both push-ups and pull-ups. Not only did the vast majority of firefighters improve their physical capabilities in each category, the improvements were in most cases dramatic. The average firefighter from these two training programs, 16 weeks later, had produced the following:

- 9.4 percent improvement in the time it took to run 1.5 miles.

- 30.0 percent improvement in number of pull-ups.
- 37.1 percent improvement in number of push-ups in 60 seconds.
- 37.5 percent improvement in number of air squats in 60 seconds.
- A 38.5 percent improvement in planking time, a key measure of overall fitness and core strength.

Improved physical performance and stamina, as represented by these numbers and those from other training sessions, are great and certainly one of our goals. And these numbers are one way to represent those improvements.

However, the ultimate goal is not simply to help firefighters run faster or do more pull-ups. The long-term goal is to create a cultural shift and shape the conditions of improved mental and physical functioning, maximizing human performance, that will benefit the firefighter in all phases of his life.

“I am convinced that the O2X Human Performance Program is transforming the Boston Fire Department into a much healthier, fitter, and safer department,” said Dr. Michael G. Hamrock of Tufts University Medical Center. Hamrock is a former firefighter and now an occupational physician for the BFD.

## Improvement for the Future

O2X is here to guide firefighters down the right path toward overall healthfulness and human performance. In our eyes, small accomplishments will lead to monumental triumph and success.

Many O2X participants have felt the effects of a complete performance takeover, including Deputy Chief Mackin. “We originally hired O2X to conduct a one-time ‘train-the-trainer’ program,” said Mackin. “The feedback was so positive and the interest among our members was so great that we have just recently scheduled our third and fourth workshops.”

O2X Human Performance is committed to building healthier firefighters and stronger, more effective fire departments. We believe our training is not only good for the individual and the department but also makes for safer communities for our children and our families.

Whether you are a new fire recruit or a 30-year veteran, it is never too late to try and improve yourself. From shedding a few pounds to developing total mind and body wellness or creating an entire lifestyle change, O2X can help you achieve your goals. Let our team empower yours. We will help you #RiseHigher and achieve maximum human performance.

**O2X** provides comprehensive human performance training and education for tactical athletes so that they can finish their careers stronger than they started. The O2X team of instructors includes 30-plus human performance experts who provide the latest cutting-edge science and research in each of the primary fields of health and wellness. The O2X family is comprised of veterans of United States/United Kingdom special operations teams, Olympic and collegiate athletes, and ultra-marathoners who have a passion for healthy living and the undying pursuit of helping others push beyond their limits to #RiseHigher every day.