

Orange County Fire Authority

Firefighter Wellness & Fitness Program



Train like **your life** depends on it.



OCFA firefighters make **WEFIT**

WEFIT is great. It's scalable to your ability, not cookie cutter. Before the program, I was in fairly good shape, but had little stamina. Over six months, I built specific muscle groups that mimic the things I do on the fire ground, so my endurance improved immensely. I also worked on my heart rate and diet. Now, it doesn't take me as long to recover and everything just seems easier.

—Mark Lundquist, age 46, Station 26, Irvine

Table of Contents

Introduction.....	1
History.....	2
Teamwork.....	3
Medical Clinic.....	4
Progress.....	5
Firefighter successes.....	6-7
Program benefits.....	8
Data.....	9
WEFIT exam.....	10
WEFIT fitness program.....	11
Future.....	12-13

WEFIT Program Benefits

- Greater **stamina** and **strength**
- Decreased risk of death
- Increased quality of **life**
- **Decreased** risk of **injury**
- Decreased risk of disability from disease/injury
- Improved **performance**
- Reduction of anxiety, stress, tension, depression
- Increased **energy** and self-esteem
- **Enhanced recovery** from strenuous and exhaustive work



a success

“There is no wealth but life.”
–John Ruskin

WEFIT Mission

The Orange County Fire Authority Wellness and Fitness Program (WEFIT) serves to provide OCFA firefighters and professionals with knowledge, support and opportunities to improve their physical health, wellness and fitness in order to enhance job performance and an overall healthy personal lifestyle.

➤ A 46-year-old firefighter who suffered a ruptured cerebral aneurysm and later died...A 44-year-old who had a sudden heart attack and died while hosing down roofs during a brush fire...A 56-year-old 30-year fire veteran who died following heart surgery— shortly after retirement. OCFA's Wellness and Fitness Program was inspired by the loss of 1 percent of its workforce over an eight-year period— many, potentially preventable deaths.

“The people who should be credited with starting this program are fallen firefighters,” says Joe Kerr, president, Orange County Professional Firefighters Association, IAFF Local 3631. “I’ve given 13 eulogies since I’ve been chief,” adds OCFA Fire Chief Chip Prather. “Even though I’ve always promoted fitness, it was time to see if we could affect major change.”

Working together, the two and a team of others began developing the OCFA Wellness and Fitness Program in 2003, based on an international initiative.

“Our goal is two-fold,” says Captain Mike Contreras, OCFA Wellness and Fitness coordinator. “First, we are preparing our people for every aspect of firefighting. Our physical training segment helps firefighters increase strength and train at specific heart rates so they can do their work without tiring and decrease their chances of getting injured. Secondly, since



heart attacks are the No. 1 killer of firefighters, we are preparing them for the physical demands of their jobs so by the end of their careers, they can enjoy a healthy retirement. Our

program includes wellness elements like nutrition, fitness testing, medical screening and education.”

Many factors set the OCFA WEFIT program apart:

- A labor/management partnership with a dual focus of holistic firefighter health
- A WEFIT coordinator/trainer, who oversees the fitness program, an exercise physiologist, peer fitness trainers, and an education program
- An exercise physiologist, who offers the latest research in the science of body movement. Programs are individualized to each firefighter.

- A university-based health clinic that provides extensive fitness, screening and medical testing
 - A monthly summary of generalized data about OCFA firefighter health so the program can continually be updated
 - An academy where heart rate monitors are used to help recruits gauge their response to work-related activities and monitor their level of fitness later on the job
 - Peer fitness trainers systematically trained by the WEFIT coordinator, exercise physiologist and other specialists
 - WEFIT Oversight Committee, which provides program guidance
 - Meetings with prospective firefighter recruits to get them started on a fitness routine before the academy starts
- Now in its third year, OCFA's WEFIT program is clearly working. Inside, we'll show you how.

“Our firefighters are making an impact on their health, as more than 90 percent are involved in the WEFIT program.”

– OCFA Fire Chief Chip Prather

Safeguarding OCFA's human foundation

➤ *Healthy firefighters are the foundation of the Orange County Fire Authority. They get the job done with fewer injuries, safeguard the community, and strengthen the organization. But the development of a systematic health and fitness program was a slow process.*

One issue that had blocked previous wellness program efforts at the OCFA was firefighters' concern about losing their jobs if fitness was called into question. WEFIT addresses this by keeping test results confidential. This, along with a voluntary, non-punitive evaluation, supports and encourages participation. The OCFA worried about the financial implications of physical exams that could uncover costly medical problems. They found, however, that the program will save money in the long run.

In the mid-1990s, national trends in firefighter injuries, illnesses and line-of-duty deaths showed the need for an international wellness and fitness program. From 1997 through 2000, ten major fire departments in the U.S. and Canada developed the Fire Service Joint Labor and Management Wellness-Fitness (WEFIT) Initiative. The Washington, D.C., offices of the International Association of Firefighters (IAFF) and the International Association of Fire Chiefs (IAFC) then published the initiative.

The Orange County Fire Authority, directed by Fire Chief Chip Prather, established a labor/management project team, reviewed the WEFIT initiative, and presented its recommendations to the OCFA Board of Directors. On June 26, 2003,

the Board approved implementation of a WEFIT pilot program, as long as the funding was shared among the union (OCPFA) and a Federal Emergency Management Agency (FEMA) grant.

On Sept. 25, 2003, the OCFA Board of Directors accepted the FEMA grant and the union's 50 percent cost share agreement, approving WEFIT as a two-year pilot, with testing beginning in January 2004 at the Center for Occupational and Environmental Health (COEH) at the University of California, Irvine (UCI).

Jorge Camargo, Division 1 Chief and an original WEFIT committee member,

stressed that it took several years to earn the trust of OCFA firefighters before participation started to grow. "Our firefighters had to see how we responded to someone who had a heart attack or a major medical issue

**"We check the oil in our engines, make sure the tire tread is good and the brakes work. But the human asset for our fire department is really what gets the job done."
– Joe Kerr, OCPFA President**

to make sure we provided the support we promised—specialized physicians, rehabilitation, a return to work. They saw that we cared about making sure they could perform healthy—and retire healthy."

The labor/management team, now called the WEFIT Oversight Committee, provides guidance on WEFIT program issues and promotes participation. "We've set the tone for OCFA's commitment to fitness and are seeing results in the performance of our people," says Battalion Chief Mike Boyle, an original committee member. "I've always promoted fitness and am excited that WEFIT has given health and wellness a permanent place in our organization."

COMPREHENSIVE WELLNESS-FITNESS PROGRAM

- Medical exams
- Fitness evaluations
- Immunizations and disease screening
- Injury rehabilitation
- Lifestyle counseling
- Medical/fitness/injury rehabilitation
- Data gathering and reporting
- Firefighter recruit training
- Community Outreach (Fire Fit Kids)



Working in step for health

➤ OCFA's Wellness and Fitness Program was launched because of a three-way partnership: the Orange County Fire Authority, the Orange County Professional Firefighters Association (Local 3631), and the federal government.

"The OCFA put up one-third of the money, the union matched it with \$579,912, and we received \$476,600 from a FEMA grant," said Fire Chief Chip Prather. "This helped us pay for a WEFIT coordinator and the first round of physicals at the University of California Irvine's (UCI's) Center for Occupational and Environmental Health. I was initially

worried about the financial implications of uncovering health problems, but these didn't bear out. Everyone agreed that having fit firefighters was important, but we wanted a more holistic approach."

Joe Kerr, president of the union, felt the same way. "Chief Prather and I agreed that we want our people to live, to work, and to retire in dignity and enjoy their families. There's no sense in having good pay and good retirement benefits when so many firefighters die on the job and closely after retirement. The WEFIT program directly takes care of our people."

It Takes a Team

- Firefighters
- Wellness & Fitness Coordinator
- Exercise Physiologist
- Peer Fitness Trainers
- UCI Center for Occupational & Environmental Health
- OCFA Executive Management

- Fire Captain
- Battalion/Division Chiefs
- OCFA Risk Manager
- OCPFA President
- WEFIT Oversight Committee
- OCFA Board of Directors
- U.S. Government (FEMA grant)

FAST FACT: Firefighters face a much higher risk of death from heart attack when battling a blaze—up to 100 times the normal rate—and can be struck even when performing less strenuous tasks. (Harvard study, 2007)





Keeping fit for work and life

➤ Many firefighters who undergo the three-hour, voluntary, on-duty medical exam and fitness test for the first time at the UCI Center for Occupational and Environmental Health (COEH) are surprised—and pleased—with how comprehensive the WEFIT program is. Results are confidential.

“Firefighters are very competitive and many use WEFIT as a motivational tool to improve their fitness from one exam to the next.”

– Dale Steiss, UCI Exercise Physiologist

“After the firefighters fill out a questionnaire, a doctor spends 30 to 45 minutes asking about their work, family history and overall health,” says Dr. Leslie Israel, who oversees COEH.

“Our goal is to identify existing or potential medical problems by assessing an individual’s risk profile. We provide education during the exam—reinforced in the packet later—on how to minimize or eliminate risk factors that can lead to disease. If there’s a problem, firefighters are referred to a physician.”

The center is one of three established in California by the University of California under mandate by the state legislature to train occupational health scientists and professionals, conduct research, and prevent injury and disease.

Monthly meetings between OCFA and COEH allow everyone to discuss concerns, review progress and augment or enhance the program as needed.

“We also compile monthly aggregate data, which is reviewed by WEFIT’s Oversight Committee and serves as a measure of firefighter health and program outcomes,” says Dr. Israel. “The information—which summarizes results and does not identify individuals—is also used to identify trends or problem areas that the WEFIT program can target through training and education.”

BODY AGE VS ACTUAL CHRONOLOGIC AGE

Firefighters have fun with the BodyAge page, which is included in the exam packet. Ideally, your BodyAge should be at least the same as your actual chronological age or lower. BodyAge is calculated from the results of some of the assessments and how you compare with others of your same age and gender. The BodyAge page is not designed to identify all health issues (such as cancer). Specific health concerns are identified by the doctor and included in the medical summary of the packet. Consult with your doctor to treat health problems and meet with your fitness trainer to set realistic goals to reach your obtainable BodyAge. One hypothetical example:

Joe Firefighter, your BodyAge is 48, and your actual chronologic age is 40.

RECOMMENDATIONS

Joe, the following are factors that will improve your BodyAge. By improving these factors and following a well-rounded wellness program, it is possible for you to reach a BodyAge of 35.

- Improving your body composition from 35.0% to 24.0% (body fat) will improve your BodyAge by 4 years.
- Improving your cardiovascular VO2 score (aerobic capacity) from 36.6 to 42.0 will improve your BodyAge by 3 years.
- Lowering your total cholesterol from 240 to a range of 100-199 will improve your BodyAge by 4 years.
- Lowering your systolic blood pressure from 135 to below 120 will improve your BodyAge by 2 years.



WEFIT'S third year powers up

➤ “Our OCFA WEFIT Program is unique,” says Risk Manager Fausto Reyes, WEFIT program manager. “I’m not aware of anyone in the country offering as many of the program elements we’ve implemented. For example, new recruits receive a WEFIT exam, which provides an initial report card of health and fitness status and a career-long baseline. We’ve also given them heart rate monitors, which provide a baseline on how hard they should be training for the physical demands of firefighting. Proper conditioning allows them to perform their jobs and helps prevent injuries and disabilities. Combined with the motivation offered by our Peer Fitness Trainers, these heart rate monitors serve as a tool to keep recruits engaged in the program. This is especially important

because the failure rate for recruits is often at the fitness level.”

The WEFIT program has had a significant impact on preparing recruits to be OCFA firefighters:

- Academy injuries have been significantly reduced
- A fitness program was developed based on the demands and movements of the job
- Recruits are trained in the fitness program, which they will carry throughout their careers and help reduce occupational injuries and illness
- Recruits will help promote and maintain the OCFA health and fitness culture

Prior to implementing the WEFIT program, several assumptions were discussed during the planning phase.

- Participation may be low if WEFIT is voluntary
- Workers’ compensation claims will spike due to injuries/illnesses found by WEFIT exam
- Labor/Management issues will delay and impact program

FAST FACT: During OCFA’s Recruit Academy 31, the Functional Movement Screen (FMS) was added. The FMS is a series of seven tests that look at fundamental movements in order to identify individuals who have movement pattern problems. Based on the results, Academy 31’s physical training program was tailored to correct movement pattern problems, decrease the risk of injury, and improve overall performance.

- Data collection by other fire departments has been inconsistent, so OCFA may see same difficulty
- WEFIT will have a positive impact on firefighter health and fitness

Now in its third year, the WEFIT program has had a significant impact on OCFA firefighter health and fitness and the initial planning assumptions did not materialize. In fact, the current progress has exceeded expectations:

- More than 90% participation by firefighters
- More than 90% of firefighters completed WEFIT Disease Screening and Immunization Program
- Increased personal firefighter fitness and health through fitness program participation
- Continued positive health and fitness trends shown by aggregate WEFIT data
- Continued downward trend of workers’ compensation costs
- Continued downward trend of injury loss time and full salary leave costs
- Formation of an alliance of labor and management to make the program a success



Firefighters put their heart into WEFIT

➤ *More than 90 percent of the more than 800 OCFA firefighters and fire managers participating in the WEFIT program say it's making a difference in their work and private lives. Here are some of their stories:*

Craig Carlson, 57

"WEFIT saved my life," said Carlson, a 34-year veteran who worked on Engine 5 in Laguna Niguel for nine years before retiring following six-way heart bypass surgery.



Craig Carlson

"I'm grateful to Dr. Israel for referring me to a heart specialist after I felt a burning sensation in my throat and chest during my WEFIT treadmill test.

The specialist said my EKG was ok, but an angiogram showed my arteries were blocked 80 to 90 percent. Five days later, I had surgery. If Chief Prather and the union had not come together to make this program available, I probably would have had a heart attack within the year, just like my dad did at my age."

Imelda Cordova, 26.

"WEFIT helped me build upper body strength and endurance, which allows me to maintain proper body posture and good technique," Cordova says. "Many of the guys can muscle it and don't have to rely as much on technique."

Cordova, a probationary firefighter who works at Station 31 in Mission Viejo, depends heavily on technique to throw a 24-foot ladder. "I don't have the natural upper-body strength to simply muscle the ladders. I have to be efficient because it takes every ounce of power that I have to get the heavy ones to go up."

Cordova says she especially enjoys the family environment at the OCFA. "My crew at the station, the guys in

the academy, Nancy Espinoza the exercise physiologist—everyone is here to support one another."

Ray Monreal, 47

"At first, I was a little leery about WEFIT," says Monreal, from Station 37 in Tustin. "Then I started seeing results. I have more stamina on the fire ground and can do more before I need a big rest. Most important was the education



Ray Monreal

on how to use different muscles and get maximum benefit from working out.

"Sitting on a big blue bouncy ball, you stand up from a squat, pushing a 20-pound smash ball upward to hit an object, and then catch it. **This exercise alone made me feel more confident climbing ladders while holding a tool. I'm a better resource now and have more to offer the public.**"

Mark Hubert, 31

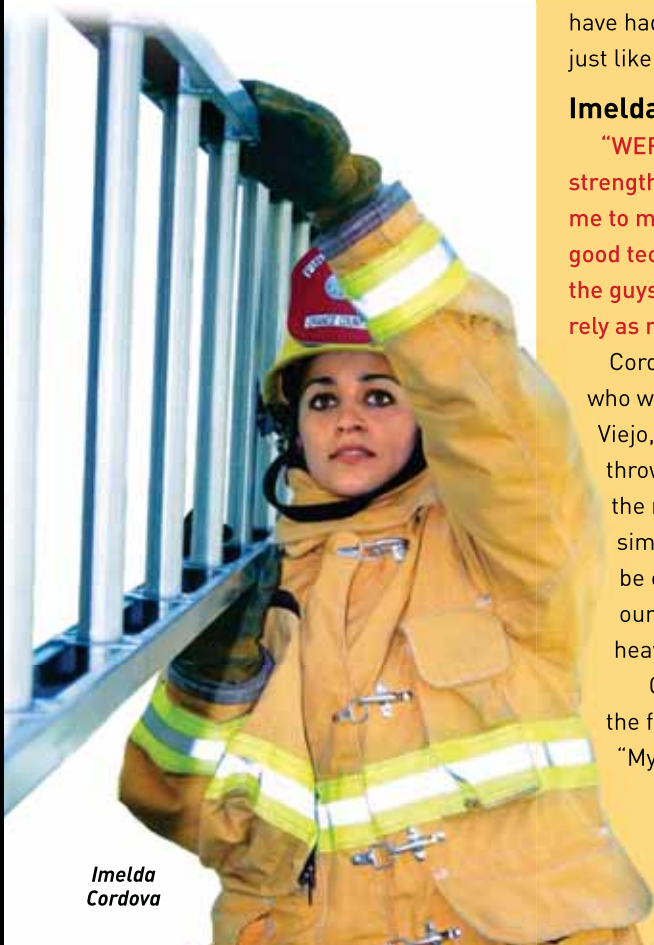
"WEFIT is great in every regard," says Hubert, who also works at Station



Mark Hubert

31. Learning he had basal cell carcinoma, an early skin cancer, was a "heck of an eye opener at my age.

"It would have never entered my mind to have my moles and freckles checked, but they removed eight spots. Now it goes way beyond skin care and an EKG. I'm interested in total wellness and fitness and encourage people to use the program to the fullest." (See page 10 for more about Mark.)



Imelda Cordova

Tim Gogerty, 47

"I was looking for something to change out my workout," says Captain Gogerty, a 28-year veteran and helicopter crew chief who works at John Wayne Airport. "The core fitness class was a real eye opener. I used to lift heavy weights and thought I was in good shape. **But I found it was better to do stretches and exercises more closely related to my job.**"



Tim Gogerty

Working with lighter weights and doing exercises like pushups and sit ups off a large rubber ball, Gogerty pays close attention to proper form and balance. "I feel like I'm now getting a total body workout." And the unexpected benefit? An improved golf swing. But his game, he says, is another story.

Tom Harhay, 49

The sudden blare of an alarm can be irritating, but for Harhay, it was potentially dangerous. **"I'm not an excitable person, but during night calls, my heart rate would jump and I'd feel light-headed and dizzy,"** says Harhay, who works at Station 60 in San Clemente.

An angiogram was normal, but a stress echocardiogram and extended heart monitoring finally revealed the culprit: ventricular tachycardia.



Tom Harhay

The solution was to decrease stress. "I stopped working overtime and increased my cardio and my heart hasn't skipped a beat since." WEFIT has made him even more aware of good health. "Everyone at my station is into WEFIT. It definitely has the potential to improve your overall life."

Mark Lundquist, 46

"My three-step, 20-minute, all-out workout really prepared me for my one-year test after the academy," says Lundquist, a paramedic at Station 26 in Irvine. **"It included stretching, cardio at a sustained 180 beats per minute, and 'rolling foam,' which prevents muscle soreness."**

Once a successful television composer, Lundquist changed careers after 9-11. "I wanted to be an asset to society in a different way. When I help those who are hurt and in pain, and see the relief on their faces, it makes my own aches and pains from training worth it." (See the inside front cover for more on Mark.)



Mark Lundquist

Jeff Hoey, 38

As a Peer Fitness Trainer, Hoey's first subject was a complete success: himself. "The guys would laugh, because I was 230 pounds back then. But I tried the training on myself and got down under 200. I was my own experiment."

FAST FACT: "When I started out in fire service, I could bench press 350 pounds, but couldn't run across the street without being out of breath. WEFIT is not about sheer bulk strength. It's about cardiovascular conditioning and enough strength to keep repeating an activity over and over."

– Mike Boyle, Battalion Chief, Division 5

Hoey, who works at Station 25 in Midway City, says WEFIT gives firefighters the opportunity to care for themselves. **"This is important in a job that takes its toll, especially for people who take care of everyone else.** The program is awesome, including the physicals to see how you're doing and the trainers to help you get there. Our goal is to keep everyone in shape so they can retire on their own terms."

Hoey enjoys WEFIT's benefits—quicker recovery, fewer injuries, increased endurance—but he's not totally happy unless he's coaching others. "It's fun to help people succeed, whether it's playing soccer with my kids or watching firefighters achieve renewed health and greater enjoyment in life."



Jeff Hoey

WEFIT benefits the community, firefighters

➤ *WEFIT plays an important role in creating a healthy and positive work environment, which benefits the community, firefighters and the organization.*

- Community—gets a high level of service
- Firefighters—stay healthy and fit to perform job and enjoy retirement
- OCFA—gains healthy employees and lower costs: reduction in lost time resulting from injuries; reduction in worker's comp costs; health and fitness culture creates greater morale and positive outlook on job performance; reduction in medical insurance costs and sick leave time

“Because of WEFIT, our crews are more productive and can function longer, fires can be more easily controlled and contained, and the level of firefighter health has improved overall.”

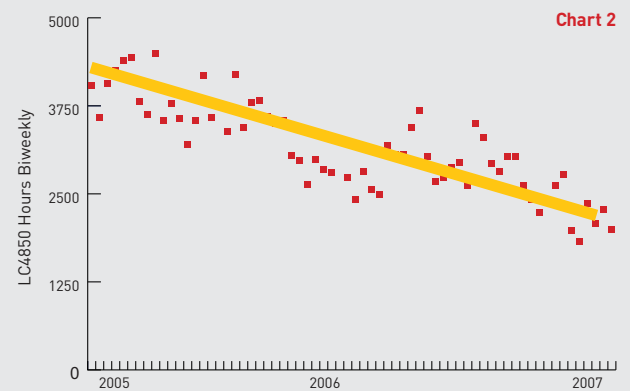
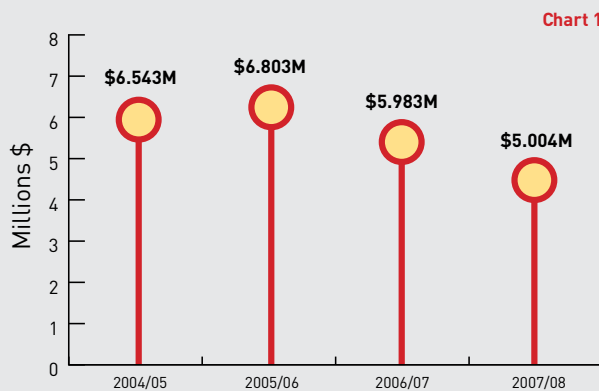
– Mike Boyle, Battalion Chief, Division 5



WEFIT helps cut OCFA's workers' compensation costs. Annually, an independent actuary estimates the funding reserves needed to pay OCFA's work comp costs—doctors' fees, medication, physical therapy and other services. **Chart #1** below shows the projections made by the actuary for the coming year and recent past years. The funding needs for the OCFA self-insurance workers' compensation program have decreased over the past four years, even as OCFA's staff size has increased.

WEFIT also helps minimize the number and severity of firefighters' injuries, which in turn, reduces the need

for time off due to injury. Labor Code (LC) 4850 refers to salary paid to an injured employee when placed off work by a treating physician. While healing, firefighters are entitled to LC 4850 for up to one year. **Chart #2** below shows the hours of LC 4850 used each biweekly pay period, from approximately January 2005 through March 2007. The lower the number, the less hours of work missed due to injury by firefighters. There has been a significant downward trend over the last two years.



and OCFA

Documentation allows WEFIT to build muscle

The ability to accurately document WEFIT data is vital in order to measure, review and analyze that data to determine program effectiveness, assess health risks and fitness levels, and measure cost effectiveness. Results have been tracked from the start of the WEFIT program in January 2004 to the present.

“One of the biggest challenges of firefighter wellness programs across the country is the lack of consistent data collection,” says Fausto Reyes, OCFA Risk Manager and WEFIT Program Manager. “Officials from other fire departments have said the information we collect is comprehensive and illustrates our progress. Data collection is necessary for program success and measures the overall fitness and health of our firefighters.”

Physical and fitness exams

With the assistance of the OCFA WEFIT medical provider, UCI Center for Occupational and Environmental Health (COEH), OCFA has established a methodology that tracks examination data and provides it to OCFA monthly:

- Number of physical exams
- Number of fitness exams
- Health data consisting of various health risk factors
- Lifestyle Questionnaire information

Aggregate data accumulated between January 2004 to January 2007 revealed the following results:

- Body weight trending down
- Aerobic capacity trending up
- New firefighter recruit fitness levels up

- Lifestyle changes improving to reduce risk factors
- Overall workers' compensation costs trending down

Peer Fitness Trainer Program (PFTs)

Firefighters train as Peer Fitness Trainers (PFTs) to help co-workers perform their jobs at a higher level and ideally stay injury free.

- The number of contacts made by PFTs increased from 54 in January 2007 to 144 in May 2007
- Out of 506 firefighters given questionnaires, 378 had contacted a PFT, 315 had a positive experience and 298 said they would contact a PFT again.

Recruit Academy

While new recruits receive a WEFIT exam before starting the academy, data is tracked and reviewed while recruits are in the academy. Twenty-six recruits completed the 14-week, job-specific Fire Academy 32-exercise program. Recruits showed improvement in all areas tested, indicating an increase in fitness level:

- 82% of recruits reduced their body fat composition by at least one percent
- 36% decrease in the amount of time required to perform a repetition of the Tower Workout, which are a series of firefighting related exercises
- As a result of improved coordination, agility, and fitness, recruits showed an 11% overall improvement in the four-minute workouts, which are used as an evaluation of metabolic conditioning.

FAST FACT: Tower workouts, which include climbing the tower and performing various exercises simulating firefighting movements, were increased for OCFA's Academy 31 because previous recruits felt this combination of exercises best prepared them for the physical demands of firefighting.

“We've integrated WEFIT into our academy training program,” says Art Nevarez, Battalion Chief for OCFA's Operations Training and Safety. “We're seeing increased endurance and stamina, which can improve overall health, sharpen the mind, and improve productivity throughout the day. We've also seen a reduction in injuries.”



WEFIT builds firefighters for physical work

➤ *Firefighters face unique occupational hazards: extreme heat and exertion, toxic substances, psychological stress. The WEFIT program, which is totally voluntary, offers a variety of components to prepare recruits and firefighters for job-specific challenges.*

Medical exam and fitness tests

Medical exams and fitness tests, which firefighters take every other year, are conducted at the UCI Center for Occupational and Environmental Health (COEH) and take about three hours to complete. Exams are scheduled on duty to allow all personnel to attend.

“I was skeptical at first, but I think the WEFIT exam is invaluable,” said Mark Hubert, 35, who was shocked to learn that ‘freckles’ pointed out during his exam turned out to be treatable skin cancers. “Many of us anticipated only getting a basic physical and blood test, but they offer a hearing test, eye exam, pulmonary test, strength and endurance tests, treadmill cardio test and much more. Later, I was sent a 25-page, easy-to-understand packet of personal health information with further recommendations.”

Exercise physiologist Dale Steiss, who administers the fitness tests at the medical clinic, stresses a comprehensive approach to fitness. “We counsel that to improve performance, firefighters should work on muscular strength, aerobic capacity and muscle endurance—not just outright strength.” He provides Nancy Espinoza, OCFA’s exercise physiologist, with test score summaries so she can individualize a fitness or injury rehabilitation program upon request.

Immunizations

Leni O’Neill, R.N., Certified Occupational Health Nurse Specialist, developed a comprehensive immunization program for WEFIT—and personally follows (sometimes literally) more than 800 firefighters to make sure they are immunized properly. *“When you can help firefighters maintain their highest level of wellness, you also take care of the people they are helping. You*

don’t want a firefighter to pass on the measles to a pregnant mom or have firefighters catch something and pass it on to their families. Immunizations reach a bigger circle than that one person.” O’Neill established an electronic database to help her track and monitor vaccination updates and developed systems to review and update firefighter immunization records to provide necessary screening and vaccinations.

“WEFIT is not just a fitness program, as it offers all-round wellness. For my part, I assess and advise individual firefighters about improper movement patterns that could potentially impede performance, I emphasize working out at different intensity levels to shorten recovery time, and I teach individuals how to correct muscle imbalances and other complex problems.”

– Nancy Espinoza, OCFA
Exercise Physiologist

- Vaccinations are provided for Hepatitis A (series of 2), Hepatitis B virus (series of 3), Tetanus/Diphtheria, Measles, Mumps, Rubella, Chicken Pox and Influenza. Screening is done for Tuberculosis, Hepatitis C and HIV.
- Medical oversight is provided by OCFA EMS Medical Director Ken Miller, M.D.

Data collection

What originally started as an experiment to show firefighters their heart rates during manipulative training has grown into a core project that allows WEFIT to quantify the physical demands of the firefighter’s job. By measuring intensity through wrist heart rate monitors, WEFIT trainers tailor workouts to mimic the workloads of the profession.



“Some think this program is about working out, but it’s not. It’s about building professional athletes who use their bodies to get the job done,” says Captain Mike Contreras, WEFIT program coordinator. “We’re preparing you for a fire tonight, where to get the job done, your heart will have to beat up to 200 beats per minute to pump blood through your body and brain. Regular workouts building cardiovascular endurance and muscular strength specific to your job will enable you to do your job and live a longer life.”

Quarterly classes

Quarterly fitness and nutrition educational classes are offered at headquarters and in the field. The WEFIT team continues to stay abreast of the latest fitness trends based on OCFA firefighter aggregate data (body fat, injuries, heart rate levels for optimal job performance) to help firefighters find new and exciting ways to stay fit.

Noontime fitness

These twice weekly group circuit training classes at headquarters offer another option for keeping fit.

Exercise physiologist

Nancy Espinoza, who has a master’s degree in Exercise Science, develops individualized nutrition, fitness assessment and injury rehabilitation programs upon request. For example, she helped a firefighter recovering from cancer learn corrective exercises to slowly build strength and endurance. After assessing another firefighter’s lower back problem, she determined it was caused by his rounded shoulders. “I gave him corrective exercises to engage the muscles between his shoulder blades and pull his shoulders back.”

Peer Fitness Trainers (PFTs)

PFTs undergo precise training for certification and must stay abreast of the latest exercise techniques and fitness topics, including core strength and stability, flexibility, and strength and conditioning program design. PFTs perform assessments, such as pre-exercise screenings and movement and mobility screenings. They design fitness programs and evaluate form and technique to ensure the safety and efficiency of an exercise program. Mike Contreras and Nancy Espinoza, who have received training from some of the most respected experts in the fitness industry, continue to fine-tune the program.

Recruit Fitness Training

The Academy’s job-specific physical training program is conducted one hour a day, four days a week for 14 weeks to improve recruits’ overall fitness levels, minimize risk of injury and prepare them for the physical demands of firefighting. Heart rate information is gathered using individual wrist heart rate monitors during each session to monitor progress and improvement. Recruits who attend the OCFA Fitness Fair—a three-hour introduction to the Academy physical fitness program—usually enter the Academy better physically prepared than non-attendees. After graduation, recruits take their heart rate monitor with them so they can continue to measure their heart rates during physical conditioning.

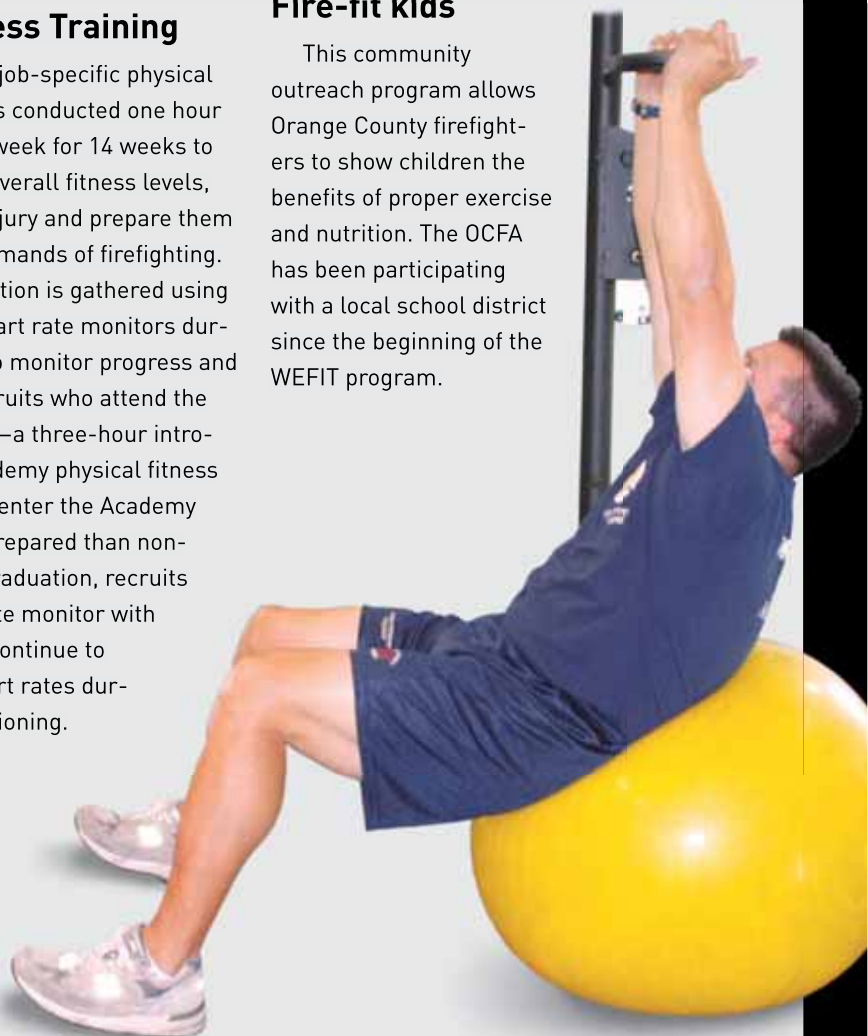
FAST FACT: WEFIT heart rate test results are taken from studies of Orange County firefighters during training, not from a generic lab. The data reflects training levels necessary to perform on the job.

Station equipment/gym memberships

Fire station equipment is standardized to meet the physical demands of firefighter jobs. This equipment will be included in all new fire stations, while existing stations will be outfitted as funds become available. Gym memberships are provided to fire stations that do not have physical space for fitness equipment.

Fire-fit kids

This community outreach program allows Orange County firefighters to show children the benefits of proper exercise and nutrition. The OCFA has been participating with a local school district since the beginning of the WEFIT program.



Taking healthy steps into the future

➤ *An organization's most important asset is its people. The WEFIT program has been a huge investment, but OCFA is seeing huge benefits.*

"Our firefighters are making a major impact on their health," says OCFA Fire Chief Chip Prather. "At the beginning, we expected to see much lower levels of participation and increases in workers' comp claims, but we've seen exactly the opposite. At a recent luncheon, the food was healthier and people were talking about their workout plans. Healthy habits are becoming routine. Even those who aren't exactly prime specimens of fitness are now out walking. Best of all, we have data that backs up these observations."

As the WEFIT program has evolved, much has been learned. WEFIT is much more than a medical exam, immunizations and fitness test. It is the nurturing of an attitude and culture that values the development of the organization's most valuable resource—its firefighters—which, in turn, provides the community with a high level of service.

"It's unbelievable," Chief Prather adds. "In three years we've grossly exceeded all expectations. We're very committed to the program. Instead of thinking we ought to have people running five miles a day, we're looking at the nature of an injury, type of work, points in time when extreme exertion is required

and how frequent that is, and types of programs and exercises needed to positively influence those goals. We've got a good baseline of data and enhancements to the program driven off of experience."

The WEFIT program is like a personal workout program—it must be reinvented and modified to see results and reap benefits. So the OCFA continues to re-view and analyze program data to ensure WEFIT maintains its focus of fitness, health, and injury/illness prevention, along with identifying and implementing

methods to keep participants motivated.

"As the program moves forward, we will continue to collect data and conduct studies that will better help us understand the physical and mental demands put on OCFA firefighters and

firefighters worldwide," says Mike Contreras, WEFIT program coordinator. "With the information gathered from these studies, WEFIT will continue to progress."

"Our firefighters, on average, only live eight years into retirement," says Joe Kerr, OCPFA union president. "WEFIT is changing that. Not everything can be detected or prevented, but the program is one more tool to enable firefighters to stay healthy and detect problems early. We want our people to live, work and retire with dignity."

"The achievements of an organization are the results of the combined effort of each individual."

– Vincent Lombardi





WEFIT is not just a physical examination. It is a comprehensive, proactive approach to firefighter health and fitness.

As WEFIT moves into the future, program administrators will continue to review, evaluate and explore opportunities to understand the physical demands of firefighting and explore solutions to mitigate these demands and reduce injury or death. The following are only a few examples of activities in pursuit of this effort.

Heart rate monitors

The WEFIT Program has utilized individual wrist heart rate monitors over three firefighter academy periods, using heart rate data as a measure of firefighter fitness exertion levels while in the field. This information has been valuable in understanding the intensity at which firefighters work and how to properly prepare to work at high exertion levels. It also helps firefighters learn their individual heart rate levels during firefighting. This provides them with the individual heart rates they need to reach when performing physical and metabolic conditioning.

Hydration & core body temperature

The WEFIT program utilized firefighters as volunteer participants of a hydration and core body temperature study. They were evaluated on the incidence of dehydration and monitored while performing simulated firefighting activities. While the data analysis has not been completed, preliminary data is suggesting the following:

- Firefighters routinely work at or above maximum heart rate during firefighting activities
- Tympanic temperature reading is not an accurate measure of core body temperature, which tends to be several degrees higher
- The majority of firefighters participating in the study were dehydrated

The completion of the study will provide OCFAs with data to evaluate potential solutions:

- Alternative body cooling measures
- Alternative rehab protocols
- Better fitness routines based on firefighter physical demands

FAST FACT: Recognizing the value of the heart rate monitor as a fitness and health tool, the union (OCPFA) provided \$62,000 to purchase personal wrist top computers that help OCFAs firefighters monitor their heart rates.

Rehabilitation

The OCFAs exercise physiologist is a key program resource in the development of fitness training, education and nutrition, so the rehabilitation of injured firefighters will continue to be a program focus. This includes one-on-one rehabilitation, classroom training, and rehabilitation to equipment. One of the newest additions is the Power Plate which was purchased as a rehabilitation tool and creates oscillations that cause instability throughout the body. In reaction to these oscillations, the body unconsciously stabilizes itself using the muscular system to stay balanced. This constant muscle action is what makes the Power Plate a useful rehabilitation tool.

As the WEFIT program moves towards the future, program administrators will continue to advance the methodology and technology necessary to ensure and promote firefighter health and safety.



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