



5 Steps

to implement a health-related fitness program (HRFP)

The health and fitness coordinator, in collaboration with the fire chief and the wellness and fitness committee, shall develop a comprehensive implementation plan to accommodate the unique needs of the department and the diverse interests of all members.



1

REVIEW NFPA 1583

Review NFPA 1583 for most up to date fitness procedures as well as what you should look for in a peer fitness advisor or wellness coordinator. WFI 4th addition is also a good resource

2

FIND THE BEST CANDIDATE

The **health and fitness coordinator** shall possess all of the following:

Health related

- (1) A health and fitness-related certification/designation from a professional organization
- (2) Exercise and wellness-related professional/practical experience

Wellness related

- (3) Awareness-level behavioral health training
- (4) Knowledge of locally available peer support resources

Peer Fitness Trainers shall work under the direction of the health and fitness coordinator to oversee safe participation in the health-related fitness program. They shall have the level of training and certification required by the department. LSWC recommends fitness certification through NASM, ISSA, NCSF, or ACSM



3

TEACH YOUR MEMBERS

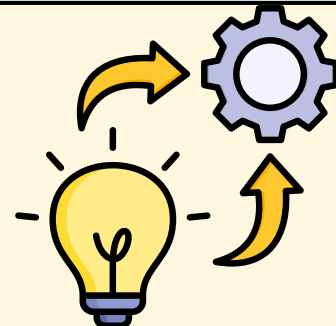
- (1) Resources related to the delivery of exercise programs for members
- (2) Resources related to the delivery of health and wellness-related educational materials for members
- (3) Resources related to continuing education and training in the areas of wellness, fitness, and program implementation



4

IMPLEMENT STRATEGIES

- (1) A qualified program coordinator and an implementation team
- (2) A non-punitive annual fitness assessment for all members
- (3) A series of exercise training options that are available to all members
- (4) Education and counseling-related resources that promote health and wellness for all members
- (5) An implementation plan that includes processes to evaluate program and member outcomes



5

HOLD MEMBERS ACCOUNTABLE

- Personalized exercise recommendations based on current interests, lifestyle constraints, and fitness assessment results
- Guidelines to assist with the delivery and execution of relevant warm-up and cool-down options
- Exercise programming to assist with the promotion of improved physical activity habits and regular engagement in physical activity, aerobic and anaerobic fitness and recovery, muscular strength and endurance, speed & Power, mobility, and injury risk
- **Recommend to retest members 4-6 months after low MET score assessment by Life Scan. Use page 3 of this packet to retest and the accompanied spreadsheet for calculations.**





LIFE SCAN WELLNESS CENTERS

Saving the Lives of America's Heroes

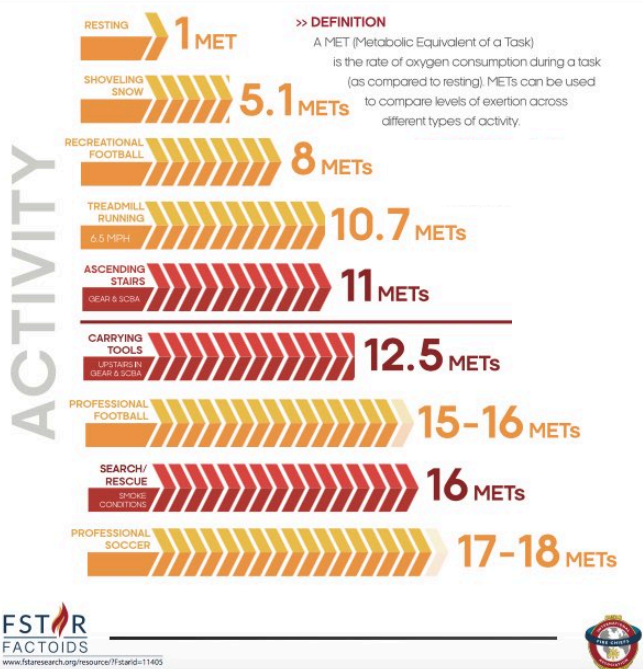
HOW YOUR MEMBERS PERFORMED ON THEIR SUBMAXIMAL STRESS TEST

what does it mean?

What is a MET?

The term MET (metabolic equivalent) is used to estimate the energy expenditure of a task. 1 MET equals approximately 3.5ml of O₂ per Kg of body weight which is the amount of energy required to sleep. Furthermore, multiples of this value are often used to quantify relative levels of expenditure.

High-Intensity Fitness Training Among a National Sample of Male Career Firefighters



| Age | METs | |
|-------|------|--------|
| | Male | Female |
| 20-29 | 12.4 | 9.6 |
| 30-39 | 11 | 7.8 |
| 40-49 | 9.9 | 6.9 |
| 50-59 | 8.4 | 6.1 |
| 60-69 | 7.3 | 5.3 |

Table 8.2.2.4 - 35th Percentile, You don't want to be below these numbers

| Age | METs | |
|-------|------|--------|
| | Male | Female |
| 20-29 | 13.7 | 10.7 |
| 30-39 | 12.1 | 8.6 |
| 40-49 | 10.8 | 7.6 |
| 50-59 | 9.3 | 6.7 |
| 60-69 | 8.1 | 5.7 |

Table 8.2.2.3 - 50th Percentile, goal is to achieve above these numbers

METS & Fire Fighters

NFPA 1582, in its most recent incarnation, established a minimum MET level based on age and sex. Workload demands of firefighters have been shown to exceed these levels.

Table 8.2.2.3 - At levels below 50th percentile a firefighter shall be counseled to improve his/her fitness.

Table 8.2.2.4 - At levels at or below 35th (VO₂=28 ml/kg-1 min-1), a prescribed aerobic fitness program shall be required, and the Authority Having Jurisdiction (AHJ) shall be advised to consider restriction from essential job tasks 1, 2, 4, 5, 6, 7, 8, 9, and 13



Life Scan recommends retesting at the station with the peer fitness trainer 4-6 months after initial test. Page 3 has the treadmill protocol from WFI 4th edition. All that is needed is a treadmill and a heart rate monitor. We have also created a spreadsheet with testing formulas to record results and get new MET scores.

Treadmill protocol for testing in house peer fitness advisor or wellness coordinator

Assessment Guidelines

1. Conduct Pre-Evaluation Procedures.
2. Monitor the participant's heart rate continuously throughout the assessment. The participant straddles the treadmill belt until it begins to move. When the treadmill reaches approximately 1mph, instruct the participant to step on to the belt. Then increase the speed to 3mph at 0% grade.
3. Start the stopwatch when the treadmill reaches 3 mph at 0% grade. Continue with this speed and grade for 3 minutes (steady state).
4. After completing the 3-minute steady state interval, inform the participant that the speed will increase to 4.5 mph. OPTIONAL: Record the participant's rating of perceived exertion (RPE) during the last 5 seconds of each subsequent stage.
5. Advise the participant that the assessment is a series of 1-minute intervals, alternating between speed and percent grade. All subsequent speed increases occur at 0.5mph.
6. At 4:01 minutes, increase the grade from 0% to 2%. At this time, inform the participant that all subsequent grade increases occur at 2% intervals.
7. The assessment will continue until the participant's heart rate exceeds the THR rate for 15 seconds, or the subject exhibits the medical criteria for early termination.
8. Once the heart rate exceeds the Target Heart Rate (THR), note the time and continue the assessment for an additional 15 seconds. Do not make any changes to the assessment speed or grade during this time. If the participant's heart rate remains above the THR for the full 15 seconds, then stop the assessment and proceed to the cool-down phase. Record the total time, including the 3-minute warm-up, at which point the participant exceeds the THR. If the participant's heart rate exceeds the target, but then drops back to the THR or below within 15 seconds, then the assessment should continue. The assessment is not complete until the participant's heart rate exceeds the THR for 15 seconds. If this does not occur within 18 minutes, then terminate the assessment and record the time.
9. Once the assessment is completed, the time is recorded. The participant should perform a cool-down for a minimum of 3 minutes at 3 mph, 0% grade. Continue to monitor the heart rate during the cool-down. Record the recovery heart rate after each minute of the cool-down.

Submaximal Treadmill Test vO2 Estimation

10. Use the formula provided below with the treadmill time in minutes (TT), and body mass index (BMI) to estimate VO2.1

$$\text{VO2 max (ml/kg/min)} = 56.981 + (1.242 \times \text{TT}) - (0.805 \times \text{BMI})$$

| Time | Speed | Grade |
|---------------|-------|-------|
| 0:00 - 0:00 | 0.0 | 0 |
| 0:00 - 3:00 | 3.0 | 0 |
| 3:01 - 4:00 | 4.5 | 0 |
| 4:01 - 5:00 | 4.5 | 2 |
| 5:01 - 6:00 | 5.0 | 2 |
| 6:01 - 7:00 | 5.0 | 4 |
| 7:01 - 8:00 | 5.5 | 4 |
| 8:01 - 9:00 | 5.5 | 6 |
| 9:01 - 10:00 | 6.0 | 6 |
| 10:01 - 11:00 | 6.0 | 8 |
| 11:01 - 12:00 | 6.5 | 8 |
| 12:01 - 13:00 | 6.5 | 10 |
| 13:01 - 14:00 | 7.0 | 10 |
| 14:00 - 15:00 | 7.0 | 12 |
| 15:01 - 16:00 | 7.5 | 12 |
| 16:01 - 17:00 | 7.5 | 14 |
| 17:01 - 18:00 | 8.0 | 14 |
| 0:00 - 1:00 | 3.0 | 0 |
| 1:01 - 2:00 | 3.0 | 0 |
| 2:01 - 3:00 | 3.0 | 0 |

Fitness: Health and Fitness Coordinator and Peer Fitness Trainers

(NFPA 1583)

15.1 Assignment.

15.1.1 The fire chief shall appoint a health and fitness coordinator (HFC).

15.1.2* The health and fitness coordinator shall be either a member of the fire department or a qualified outside agent.

15.1.3* The health and fitness coordinator shall have access to the fire department physician and other subject matter experts for consultation.

15.1.4 The health and fitness coordinator shall oversee the administration of all components of the health-related fitness program.

15.1.5* The health and fitness coordinator shall act as a direct liaison between the fire department physician or other subject matter expert and the fire department.

15.1.6* The health and fitness coordinator shall act as a direct liaison to the fire department's health and safety officer.

15.1.7 In consultation with the fire chief, the health and fitness coordinator shall form a health and fitness committee to oversee the planning and implementation of the health-related fitness program.

15.1.7.1 The members of the health and fitness committee shall be members of the department who represent the interests, needs, and demographics of all members.

15.2* Qualifications for Health and Fitness Coordinator.

15.2.1* The health and fitness coordinator shall possess all the following:

- (1) A health and fitness-related certification/designation from a professional organization
- (2) Exercise and wellness-related professional/practical experience
- (3) Awareness-level behavioral health training
- (4) Knowledge of locally available peer support resources

15.2.2 The health and fitness coordinator shall have access to both of the following:

- (1) Resources related to the delivery of exercise programs for members

- (2) Resources related to the delivery of health and wellness-related educational materials for members
- (3) Resources related to continuing education and training in the areas of wellness, fitness, and program implementation

15.2.3 The health and fitness coordinator shall maintain the continuing education requirements dictated by the coordinator's certifying body or as described in the fire department's job description, whichever sets forth the higher standard.

15.3 Peer Fitness Trainers.

15.3.1 Peer fitness trainers shall work under the direction of the health and fitness coordinator to oversee safe participation in the health-related fitness program.

15.3.2 Peer fitness trainers shall oversee the delivery of the exercise programming for academy recruits, in conjunction with academy instructors, as directed by the department health and fitness coordinator.

15.3.2.1* Peer fitness trainers shall be provided training on the risks and signs of rhabdomyolysis.

15.3.3* Peer fitness trainers shall have the level of training and certification required by the fire department and shall maintain their recertification requirements as prescribed by the certifying organization.