



Functional Fitness for the Fire Service

Presented By:

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City of Madison Fire Dept.*

Owner of www.FireRescueFitness.com

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Aaron Zamzow

- Firefighter and Training Officer for the City of Madison, WI Fire Department. Firefighter/ EMT for over 15 years.
- Certified (NASM, Ace – Peer Fitness, NSCA – CSCS, PN1) and degreed Personal Fitness Trainer with 25 years experience.
- Trained with elite athletes for the NBA, NHL, and NFL and had the privilege to study under some of the top trainers in the world.
- Owner of Fire Rescue Fitness (www.FireRescueFitness.com)
- Contributing Writer for Firehouse Magazine (Expo and World), Lexipol, FR1, WEMSA, FRCE (First Responder Center for Excellence)...
- Happy To Be Here!



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What do we want to learn today.

- Why functional fitness is essential for firefighters, EMTs and medics (15 mins)
- What is “functional fitness” for the fire service? (15 mins)
- The Top 5 Exercises for firefighters (30 mins)
- The Essential Components of a Fire Rescue Workout Program (45 mins)
- Learn how to create workouts that contain the essential components using simple equipment found around every firehouse (45 mins)
- How to Plan Workouts (30 mins)
- Q and A (equipment, nutrition, assessments, trends)...
- [FYI- www.FireRescueFitness.com/HASTINGSFIRE](http://www.FireRescueFitness.com/HASTINGSFIRE)



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Health and Fitness in the Fire Service

- We still die of heart attacks and strokes
- Cancer is projected to become the next epidemic in the fire service
- PTSD and mental health (suicide) cases continually rise...
- Orthopedics injuries still occur at a high rate

– (Ankle injuries in Chicago area Departments in December)



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We all need... “Functional” Fitness!

- Exercise (and hydration) helps with cognitive function and thinking.
- Even lifting a radio requires strength
- Fatalities occur after the fire
- Longevity- Enjoy retirement
- **Leadership- It can be YOU!**



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NEED MOTIVATION
TO START
EXERCISING

**AVOIDING DEATH
IS A GOOD ONE**

Get Fit for Duty.

www.FireRescueFitness.com

- A healthy and fit lifestyle can reduce instances of heart attack, stroke, cancers, and PTSD (by up to 30%).



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I'M GETTING
SICK & TIRED
OF HEARING
HOW I'M TOO
OUT OF SHAPE
TO BE A
FIREFIGHTER!

PERHAPS YOU
SHOULD START
LISTENING.



PAUL COMBS
Fire Engineering
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Benefits of “Consistent and Functional” Fitness.

Injury Reduction

Weight control

Improves Performance

Lower instances of Cancer

Decrease chances of sudden heart attack and stroke.

Improves cognitive thinking

Improves mental health (lowers symptoms of depression)

Helps manage PTSD

Improves immune response (COVID)



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The Proof

Exercise and depression

Studies show that exercise can treat mild to moderate depression as effectively as antidepressant medication—but without the side-effects, of course. As one example, a recent study done by the Harvard T.H. Chan School of Public Health found that running for 15 minutes a day or walking for an hour reduces the risk of major depression by 26

Exercise and PTSD and trauma

Evidence suggests that by really focusing on your body and how it feels as you exercise, you can actually help your nervous system become “unstuck” and begin to move out of the immobilization stress response that characterizes PTSD or trauma

Exercise and Injury Reduction

There is limited evidence to suggest that firefighters that exercise regularly are less likely to experience injuries while on duty. But, there is strong evidence to support those injured have a much better chance of full and shortened recovery from injury.

Exercise and Reduction of Sudden Cardiac Arrest

Regular exercise may significantly minimize this small transient risk and may lower the overall long-term risk of sudden cardiac death. Regular exercise has numerous cardiovascular benefits and has been associated with improved cardiovascular and all-cause mortality.

Exercise and Resilience.

When faced with mental or emotional challenges in life, exercise can help you build resilience and cope in a healthy way, instead of resorting to alcohol, drugs, or other negative behaviors that ultimately only make your symptoms worse. Regular exercise can also help boost your immune system and reduce the impact of stress.

Exercise and Cancer

Staying active can help you lower your risk of many types of cancer including breast, colorectal and uterine cancers. Exercise lowers your cancer risk in several ways: Exercise helps you maintain a healthy weight. Being overweight or obese raises your risk for several cancers.



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What is Functional Training?

“Training the body for the activities performed in daily life”.

-Mayo Clinic



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Our Playing Ground

Firefighting/ EMS is strenuous work!



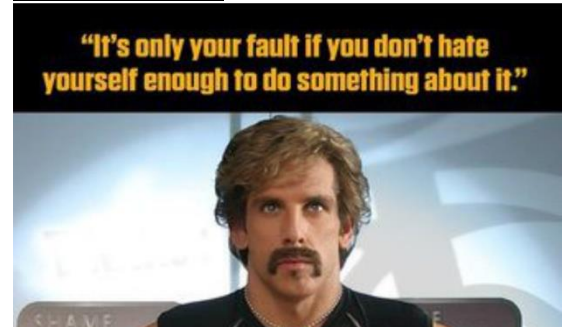
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What is “Functional” Fitness

- Marathon/ Ironman?
- CrossFit?
- P90X, Insanity?
- GET HUGE Bro-tein Program?
- How much do you bench?
- 7-minute Abs?
- Zumba?
- Yoga?



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What is Functional?

These athletes don't do these workouts to prepare for their job...

~~Jackie~~ ~~InsaneTV~~ ~~Zumba~~ ~~BodyBuilding.com~~ ~~CrossFit~~ ~~P90X~~

- Functional Fitness Defined-Jim Leonhard Workout story



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Fire/Rescue Ground Motions

- Lifting
- Crawling
- Pulling
- Hoisting
- Carrying
- Dragging
- Climbing
- Slamming (sledge)
- “Core” Work
- *Did I miss any?*



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Can we all agree?

The main goal of a firefighter, EMT and/or medics workout should be to improve performance, reduce injuries, and promote career longevity?



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**Do the exercises in your workout
mimic and/or help you do your job
more efficient and effectively?**



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Is this an effective exercise?



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How much do you bench...?

Many of the traditional *weight-lifting machines* seen in most *firehouses* do not “*functionally*” address the *physical challenges* fire rescue athletes need....



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What are Functional Exercises?

Where and why are we injured?

(shoulders, knees, and back)

What are the essential fitness components?

(core, strength, cardio recovery, power, mobility)

**What are exercises that improve performance,
reduce injury and prolong careers?**



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Plank (s)

- Back injuries = early disability
- The plank will increase core strength and efficiency allowing the body to have greater control and stability.



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All movement occurs around the core

Use multiple positions: plank, side plank, and bridge.



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Farmers Carry-

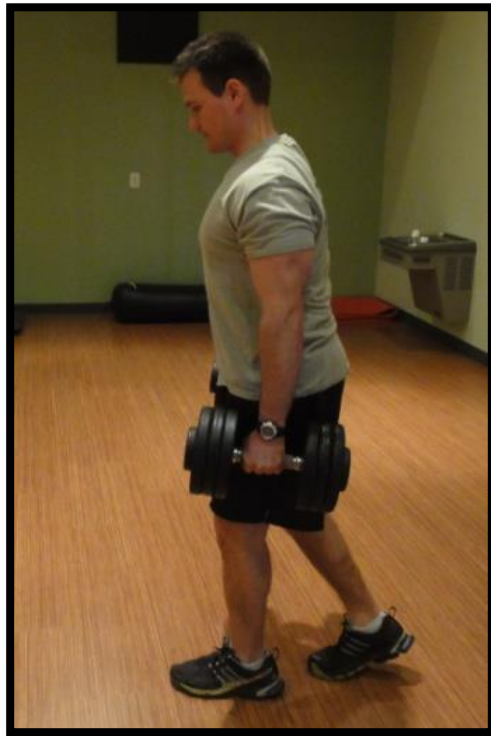
- We move in unbalanced positions (climbing a ladder, pulling hose, ventilating...)
- Required to carry heavy loads and equipment
- Develop the balancing muscles of the core and grip



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The longer and heavier you go the more you challenge the core and your grip...



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Prisoner Squats

- Targets the quadriceps, core and every other muscle in your lower body, including your glutes, hamstrings, and calves.
- Strengthen those muscles and the tendons and ligaments that connect them



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- Pull your elbows and shoulders back
- Brace your core
- Pretend you are sitting down



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Bent Over T's and Y's-

- Strengthen the deep muscles of the shoulders and upper back.
- Improve posture and reduce injury risk of shoulder



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- Keep your back straight
- Arms Straight
- Alternate between the “Y” and “T”



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Body Rows

- Improves pulling strength of the upper-back, shoulders, and arm muscles (hose line advancement)
- Improves the stabilizing strength in the low back, glutes, and hamstrings



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Foam rolling

- Roll your body weight along the foam roller
- Allows blood to flow more freely through the muscles and allow muscles *to heal and repair more efficiently.*
- "Self-Myofascial Release."



Hold your position on the “hot” (sore) spots for a couple of seconds to release the soreness (quads, hamstrings, calves, it band, chest, back).



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Let's take a break.

Culture Change?



Fitness Team Leader?



Terry Tate Office Linebacker

How Should We Workout?

Essential Components of a Firefighter Workout.

1. Have a Plan
2. You **MUST** work your Core
3. Have Some Heart
4. Be Full-body Functional
5. Warm-up and Be Flexible (foam rollers)



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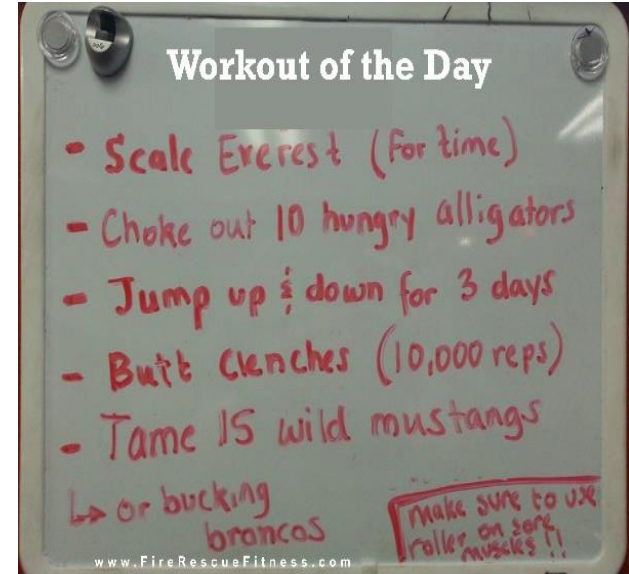
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How Should We Workout?

1. Have a Plan

- Developmental approach or progression (just like teaching a firefighter).
- Develop a training base that should increase the body's functional capacity.
- Then the intensity of the exercise is increased to emphasize goal.



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How Should We Workout?

2. You must work your core...

- During a career, almost 50% of all fire rescue athletes will hurt their back while on duty.
- Low back pain is the number one reason firefighters retire early.



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How Should We Workout?

3. Have some heart...

- Not just running or biking...
- Need to have a good level of aerobic fitness but cannot overlook the value of challenging the anaerobic systems (vo2 max).



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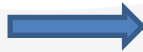


Intervals

- Humped a "charged" hose line up some stairs or dragged a victim or axed a roof open you realized the importance of anaerobic fitness.
- Good cardiovascular base then challenge the cardiovascular system with intervals.
- Intervals are one of the best ways to simulate the high level of fitness required on the fire ground



Old School...



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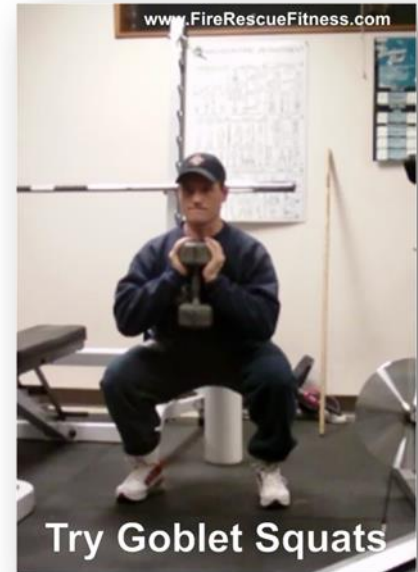
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How Should We Workout?

4. Full-body Exercise...

- Full-body approach to core training and is effective in athletic injury rehab and prevention.
- Functional strength exercises increase balance around the joints and helps prevent injuries by stimulating stabilizing muscles.
- We DO NOT Isolate muscles on the fire/rescue ground



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How Should We Workout?

5. Warm-up and Be Mobile...

- Prepare the body for movement, boosts heart rate, blood flow to the muscles, and core temperature.
- Improve the function of your nervous system.
- ***The more flexible...the more efficient the movement.***



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The Application



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Functional Workout Plan

Workout Schedule							
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1	Day 1 Workout 1	Day 2 Cardio Interval Workout <i>(stretch optional)</i>	Day 3 Workout 2	Day 4 Cardio Interval Workout <i>(stretch optional)</i>	Day 5 Workout 1	Day 6 Run/ Walk 5K or Bike/ Climb 40 mins and stretch	Day 7 OFF (Rest)
Week 2	Day 8 Workout 2	Day 9 Cardio Interval Workout <i>(stretch optional)</i>	Day 10 Workout 1 + 10-min Interval Overhaul	Day 11 Cardio Interval Workout <i>(stretch optional)</i>	Day 12 Workout 2 + 10-min Interval Overhaul	Day 13 Run/ Walk 5K or Bike/ Climb 40 mins and stretch	Day 14 OFF (Rest)
Week 3	Day 15 Workout 1 + 10-min Interval Overhaul	Day 16 Cardio Interval Workout <i>(stretch optional)</i>	Day 17 Workout 2 + 10-min Interval Overhaul	Day 18 Cardio Interval Workout <i>(stretch optional)</i>	Day 19 Workout 1 + 10-min Interval Overhaul	Day 20 Run/ Walk 5K or Bike/ Climb 40 mins and stretch	Day 21 OFF (Rest)
Week 4	Day 22 Workout 2 + 10-min Interval Overhaul	Day 23 Cardio Interval Workout <i>(stretch optional)</i>	Day 24 Workout 1 + 10-min Interval Overhaul	Day 25 Cardio Interval Workout <i>(stretch optional)</i>	Day 26 Workout 2 + 10-min Interval Overhaul	Day 27 Run/ Walk 5K or Bike/ Climb 40 mins and stretch	Day 28 OFF (Rest)



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Creating Fire Rescue Workouts

- Consider the SOPs
- What is the Goal
- Equipment available
- Time
- Work Schedule



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Functional Firehouse Fitness

Equipment

- Space!!!
- Foam buckets, hose, SCBA, heavy stuff to carry, stairs, tires, webbing
- Foam rollers, bands, H2O
- TRX, Dbells, Kbells, bench
- Squat rack (with minimal weight)
- Cable column
- Treadmill, bike, stepmill
- Sandbags, row machine, aerodyne, Jacobs ladder



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The Anatomy of a Functional Firefighter Workout

- Active warm-up (10 minutes)
- Core Training and prehab (5 minutes)
- Strength Training (20 minutes)
- Interval Overhauls (10 minutes)
 - Use an interval timer
- Stretch and foam roll (5 minutes)



PROGRESSIVE BODY WEIGHT WORKOUT

**Before beginning any FRF workout you should thoroughly perform an active warm-up. [Click here](#) for a quick 4-exercise (knees side to side, crossovers, leg raises, and step back reach) active warm-up to perform before completing this workout. Complete 2 circuits of the 4 exercises before beginning the rest of the workout.

- 5 Burpees
- 10 Pull ups/ Body Rows
- 15 Push-ups
- 20 Prisoner Squats
- 25 Bikers Crunches (25 each)
- 30 Plank (hold 30 seconds)
- + Run Stairs or Sprint 100- 200 meters



Rest 1 minute (or don't) and repeat 4 more times (for a total of 5)- record the total time it takes to finish 5 rounds and try to improve next workout.



Workout Time #1: _____ Workout Time #2: _____
Workout Time #3: _____ Workout Time #4: _____

Active Warm-up

Core (integrated in
workout)
Strength

Cardio

Finish with Stretch and
foam roll



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Create a Functional Workout

- Active warm-up (4-6 exercises)
- Core Training and prehab (4-6 exercises)
- Strength Training (5-10 full-body exercises)
 - Weights
 - Bodyweight
 - Circuits/ Sets
- Interval Overhauls (8-10 minutes)
- Stretch and foam roll (5 minutes)



Active Warm-ups and Dynamic Stretches

- Choose 4-6 exercises for time or reps
 - Chops
 - Step back reach and twist
 - Inverted hamstrings
 - Overhead squats
 - Knees side to side
 - Side lunges
 - Side to side shuffle (with band)
 - Hitch Hikers
 - Cross Overs
 - Inchworms
- Foam Roll (4 mins)



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Core Exercises and Prehab

- Choose 4-6 exercises for time or reps
 - Glute bridges
 - Plank (s)
 - T's and Y's and W's
 - Side leg raises
 - Pilates sits
 - Balance work
 - Stability ball work
 - Any rehab movements



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Strength Exercises

- Choose 5-10 exercises for time or reps
 - Push ups with row
 - Pull-up
 - Squat to press
 - Deadlifts
 - Lunges (unilateral training)
 - DB row, press
 - Bent-over rows
 - Bodyweight exercises
- Reps are based on time and goal...



Squat to Press



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Interval Overhauls (Fireground Movements)

- Choose 5 exercises or movements for intervals (30/30, 30/20, 30/15)
 - Sledges
 - Crawls
 - Sled push/pull
 - Sprints
 - Drags
 - Stairs
 - Carry
 - Ladder raises



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4-minute Stretch Solution

- Choose 6 exercises or movements for 20 seconds for 2 rounds
 - Down dog
 - Kickstand
 - Quads
 - Chest
 - Low back
 - Spider
 - Hips
- Foam roll (if time permits)



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The Anatomy of a Crew Workout

- Active warm-up (4-6 exercises)
- Fire Ground/ Strength/ Core Movements
 - Circuits of 6 or 8 exercises
 - 3 or 4 rounds (24 total)
- Stretch and foam roll (5 minutes)



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Fireground Movements

- Choose 6 or 8 exercises or movements for intervals (30/30, 30/20, 30/15)

Sledges	Mountain climbers	Hills
Crawls	Burpee	lunges
Sled push/pull	Tire flips	squat (hold)
Sprints	Plate Pushes	**be
Drags	Med ball throws	creative**
Stairs	Battle Hoseline	
Carry	Aerodyne	
Ladder raises	Dumbbell Crawls	



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Thanks for attending!

Now is the time to make a positive
change in our industry.

Eat right, exercise, hydrate and set an
example for the community.

Stay Safe and FRF
-Aaron Zamzow



HEALTHY IS AN
OUTFIT...
JUST LIKE YOUR
TURNOUT GEAR.
GET "FIT FOR DUTY"



www.FireRescueFitness.com



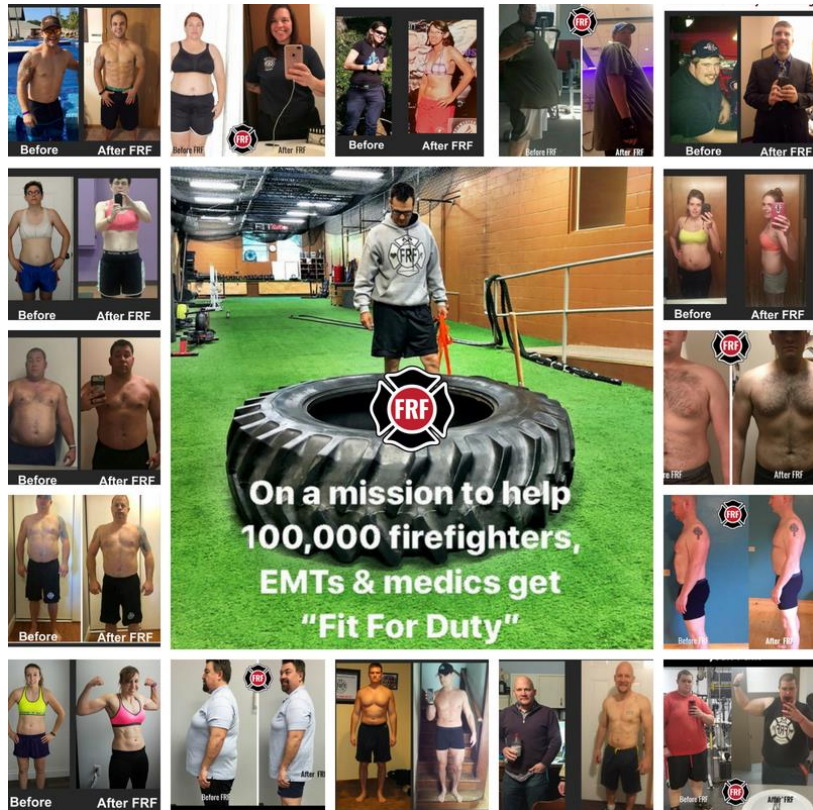
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I got your back!

FREE Workout and eating guidelines for you!
(www.FireRescueFitness.com/HastingsFire)



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Thanks for Attending



WWW.FIRERESCUEFITNESS.COM

FRF 21K CHALLENGE



ACCOMPLISH YOUR GOAL AND GET
THE 21K COIN AND ENTERED INTO THE
21K CHALLENGE RAFFLE!



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Q and A

- Where to start?
- When to Workout?
- Plan for a Year?
- Assessments?
- Best Equipment?



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Essential Firehouse Nutrition...



**Just because it's there doesn't
mean you have to eat it...**



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Essential Firefighter Nutrition



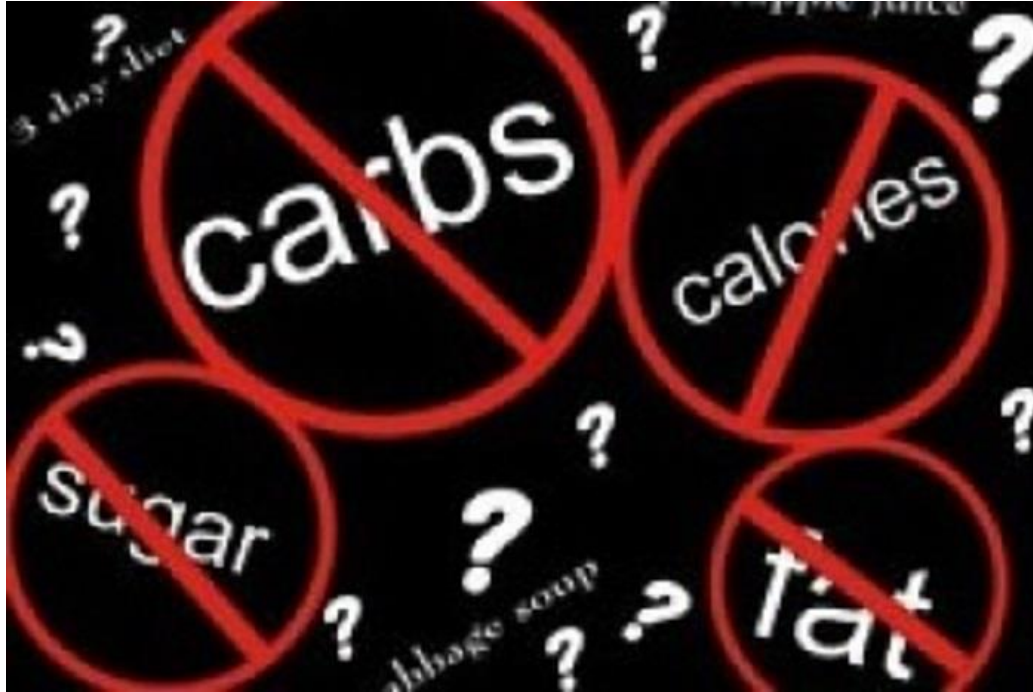
Every time you eat or drink
in the firehouse, you are
either feeding disease or
fighting it...



- Diet can treat cancer, depression, diabetes, anxiety and thousands of other health ailments.

(Forbes, October 9th, 2019)

What is the Confusion?



- High Carb
- Low Carb
- Keto
- Cabbage diet
- Low sugar
- Fasting
- Supplements (drink this shake)

Essential Firefighter Nutrition

Back to basics.

1. Hydrate (with water)
2. Eat your veggies and avoid processed foods
3. Minimize Sugars!
4. Plan, Plan, Plan
5. Healthy Snacking
6. Follow the 90/10 Rule (or less)

You can eat healthy at the firehouse...



www.FireRescueFitness.com

Hydrate (with water)

- Water is the center of all metabolic processes, the more hydrated you are the better your performance.
- Dehydration impairs performance, mental capacity, perception of effort and can be life-threatening.
- With as little as a 2% body water shortage, the ability to perform a high intensity activity can be greatly impaired.
- Water is an appetite suppressant.
- Drink plenty of water at regular intervals At minimum, consume 64 oz. of water a day).

Stay Hydrated, Stay Alive...



Eat your veggies and avoid processed foods

- Read labels and look ingredients.
 - Look for foods that you can recognize in their whole, natural state.
- Choose to eat more seasonal fruits and vegetables for optimal nutrient density and freshness.
- Veggies load your body with the maximum amount of nutrients for the least number of calories (good bargain)
 - This does not include vegetable chips or fruit juice.
- If the fruit or vegetable in question won't rot after a few days, then it's a processed food.
- Choose green, leafy, lower starch veggies when possible



Minimize Sugars

- Cakes, candies, breads, crackers, pastas, etc. all have high amounts of processed starches and sugars
- Eat a little sugar, you crave a bunch more.
- Triggers the body to store more fat.
- Sugar linked to diseases and inflammation
- Choose foods with the least amount of sugar, if a product has more than 10 grams per serving and no fiber, put it back



Tips to Reduce Your Sugar Intake

- Make a conscious efforts to just eat less sugar: reduce cakes, cookies, sugary cereals, desserts, etc.
- Find the hidden sugars. Read labels, sugar is hidden, and it often replaces fat in low-fat/fat-free foods.
- Eat whole, real foods. Remember that low fat/fat-free often means higher sugar (yogurt).
- Instead of sugary, fizzy drinks and juice drinks (soda), go for water.
- Reduce desserts either in frequency or amounts.

Nutrition Facts	
Serving Size: 6 ounces	
Servings Per Container: 1	
Amount per serving:	
Calories 160	Calories from Fat 25
% Daily Value	
Total Fat 2.5g	4%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Cholesterol 10mg	3%
Sodium 105mg	4%
Total Carbohydrate 26g	9%
Dietary Fiber 0g	
Sugars 25g	
Protein 8g	16%
Vitamin A 0%	Calcium 25%
Vitamin C 0%	Iron 0%



Plan, Plan, Plan

- When life is busy, you're super hungry, and have nothing ready to eat... That's when bad decisions get made.
- Plan for the week
 - Prepare some menu options
 - Investigate stores offering online ordering
 - Do not go to store when hungry
- Crockpot, Instapots or Air Fryers are extremely fast at making meals, get some “go-to recipes.”
- Make double or triple for leftovers



Snack Attack

- Plan ahead
- Have options for truck, station, car
- Mind portions
 - Don't let one snack lead to 10



Snack Options

- Nut Butter (peanut butter) Boat with celery.
- Jerky- Low-sodium, natural, or lightly-flavored options
- Mixed nuts pack
- Nutrition Bar- Kind Bar, RX Bar
- Hummus and Veggie Dippers-
- Greek Yogurt and fruit (low)
- Chocolate Milk- (post workout or fire)
- Grape-and-Cheese Sticks-
- Hard-Boiled Egg (1 egg)-
- Canned Tuna on Whole-wheat crackers-



Follow the 90% rule

- For 90% of the time you will follow these 5 steps to a tee. The other 10% have some foods you crave.
- What 10% of the time really means.
 - 4 meals/snacks per day for 7 days of the week – that’s 28 meals a week.
 - 10% of 28 meals is about 2 or 3 meals (that’s it)



Application- Meal Plan Option

- Eggs with Vegetables (salsa)
- Oikos and kind bar
- Protein Shake w/ banana
- Quinoa and Chicken breast and vegetables
- Avocado Steak salad w/ vinaigrette dressing



Josh Fulk

Josh has lost over 100 pounds following the FRF workouts and eating guidelines. He continues to make progress in his weight loss and performance improvement on (and off) the fireground. Way to go Josh! Looking forward to posting your continued progress..

Nutrition Hacks

You can eat healthy at the firehouse...



www.FireRescueFitness.com



How to Resist Sweets in the Firehouse (or any house)..



FIREFIGHTER SNACK OPTIONS



New and Improved Version 2.0



Over 80 Recipes!

Healthy Firehouse Recipes

Healthy and easy recipes that will satisfy your (or any) crew



Courtesy of www.FireRescueFitness.com

Stay hydrated, hide the sweets, have good choices available, plan ahead with healthy snacks, have some go to healthy recipes...

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