

Smart Nutrition for Improved Energy, Performance and Safety



Minneapolis Fire Department

**chef
marshall o'brien**

NUTRITION ON A MISSION®



Smart Nutrition for Improved Energy, Performance and Safety

Objective

The goal of this program is to improve energy and performance, and thus safety, for firefighters on the job. We have analyzed nutrition, hydration and sleep to show how they can be used to improve a firefighter's physical and mental capabilities. The program will explain why this is important and how firefighters can implement a plan to achieve this goal.

Program Summary

Significant data proves that proper hydration, smart nutrition, and adequate sleep lead to improved energy, performance, and safety for firefighters. This all starts with the city, the fire chief, and his staff recognizing this, promoting awareness, and creating an environment that encourages these changes. It is then up to the firefighters themselves. If they care about their coworkers' safety and their own safety, they need to encourage each other to work toward making the changes required to achieve these goals.

Unlike many occupations for which nutrition is the primary focus, firefighters need to focus on hydration and sleep first. Being dehydrated or mentally groggy from lack of sleep creates a huge safety risk for firefighters. Because it takes as long as 24 hours to achieve total hydration, firefighters need to follow a program of ongoing hydration. This requires awareness and development of a routine—a quick and easy change. Getting better-quality sleep is more difficult because of the uncertainty of when the next fire or emergency will occur. Firefighters can improve their sleep by eating foods and drinking beverages that promote sleep instead of inhibiting it and by creating sleep areas in the fire station that make it easier to fall asleep quickly.

Solving nutrition and body weight issues requires more time and effort. Again, it starts with awareness, but changes are more likely to occur because of peer pressure than for any other reason. Because of the safety risk for the entire squad, being in good shape and practicing smart nutrition is everyone's responsibility. Being in a situation where your buddy is unable to rescue you is a real concern. In addition, being a firefighter takes a toll on your body, so while the tasks of the job do not change, over time, your body becomes less able to perform them.

It is all about small steps. Helping someone move from excessively overweight to overweight has a greater effect on safety than moving someone from overweight to their recommended weight. The department needs to support these efforts by providing recipes at the fire stations and recommendations on smart eating and snacking for firefighters when they eat outside the station.



Smart Nutrition for Improved Energy, Performance and Safety

Program Summary—continued

Solving this issue also requires every firefighter to make smart decisions and encourage co-workers to do the same—the number one reason people make changes is in response to what their peers think. We need to foster a culture of smart eating and drinking that leads to a safer fire station.

This will not happen overnight. It starts with awareness and an environment that supports and encourages these changes. It also requires regular monitoring and reinforcement: use biometrics to show change; offer refresher courses; designate cheerleaders in each fire station (the more, the better). In time, this will become a new way of life for most of your firefighters and create a safer and healthier environment for all.



NUTRITION ON A MISSION[®]

with Chef Marshall O'Brien



Improving Firefighter Energy, Performance and Safety

This program takes current medical research on nutrition, hydration, and sleep and adapts it specifically to firefighters. Following the steps in this program will lead to better physical conditioning and better mental cognition. Achieving these two objectives will improve energy and performance and thus, safety.

The value firefighters provide to the communities in which they work cannot be understated. They truly are pillars of the community and real-life American heroes. Unfortunately, smart nutrition is often overlooked in the typical busy day of a firefighter. Smart nutrition ensures that firefighters maintain the high energy levels and quick reaction times necessary for the demanding nature of their duties.

The Chef Marshall Group understands the power of smart nutrition, having developed a sports nutrition program for high school athletes in cooperation with the Minnesota Timberwolves, the Minnesota Lynx and the University of Minnesota Athletic Department. Firefighters are also athletes, but with a big disadvantage—they never know the day or time of their “game.” More importantly, firefighters play for life or death, not simply to win. This means that smart nutrition is essential for firefighters.

When we saw a need to help firefighters understand the relationship between smart nutrition and enhanced performance, Chef Marshall created this program specifically for them, with guidelines which can easily be added to their daily routine.

Three-Step System to Improve Your Performance & Safety:

1. Nutrition
2. Hydration
3. Sleep

These three steps lead to better physical conditioning and mental cognition, which produces improved energy, performance and safety.

Performance is Built on Smart Nutrition

In this program, Chef Marshall provides firefighters a three-step system for peak performance—Nutrition, Hydration, and Sleep. We will discuss these elements so you understand what they are, why they are important, and how to integrate them into your personal program. When these recommendations become part of your daily routine, you'll quickly experience the benefits of greater energy, improved body composition, enhanced hydration status, better-quality sleep, lower risk for cardiac events, reduced pain and inflammation, and most importantly—superior and safer performance.

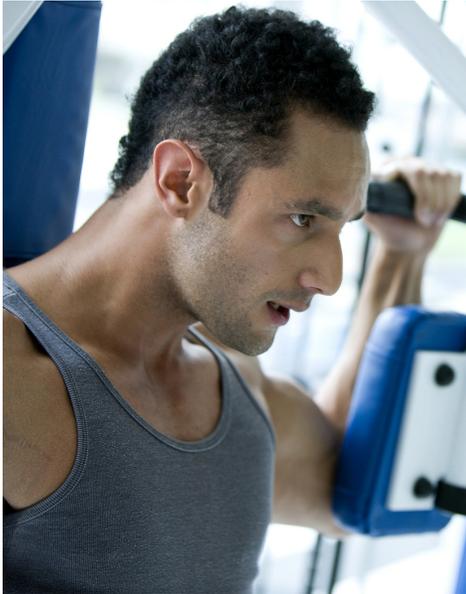
Smart nutrition leads to:

- Superior and safer performance
- Higher energy
- Improved body composition
- Enhanced hydration status
- Lower risk for cardiac events (lower heart rate, blood pressure, etc.)
- Reduced pain and inflammation
- Better-quality sleep



Improving Fire Fighter Energy, Performance and Safety

by Chef Marshall O'Brien



Performance is Built on Smart Nutrition

Nutrition for Better Energy

Firefighter duties are often physically demanding. Having a smart nutrition strategy helps guarantee that you will have the energy needed to perform your job at a consistently high level. While many Americans suffer from low energy at some point in the day, firefighter fatigue and low energy is not just inconvenient, it is dangerous. Since you never know when you will be called to a potentially life-threatening situation, it is essential that you maintain high energy levels throughout the day. Firefighting duties involve a great deal of teamwork, so smart eating should be a priority for the entire fire station. A high energy level for the entire crew means that you will be able to take care of your buddy and your buddy will be able to take care of you in the event that one of you goes down on a job. The best way to maintain high energy is to eat a diet high in vegetables, fruits, lean protein, and healthy fats on a daily basis. It is also important to avoid high-sugar foods, processed carbohydrates, excess caffeine, and fast food as much as possible.

Nutrition to Reduce Pain and Inflammation

As a firefighter, you are often expected to perform activities that can leave you feeling stiff and sore. Back injuries and related pain are especially common among firefighters. For firefighters who have spent years of your lives dedicated to your profession, your body has aged while the demands of the job have stayed the same. The good news is that smart nutrition can be very effective in increasing agility and reducing body aches and pains! The foods included in this program can help you feel better by reducing inflammation throughout your entire body. Eating an anti-inflammatory, anti-aging diet doesn't just mean fewer aches and pains: chronic inflammation is the #1 risk factor for heart disease, and heart disease is the #1 killer of firefighters. The fact is that firefighters are 300 times more likely to suffer a heart attack on the job than any other profession. Make smart nutrition a priority so you can feel your best and reduce your risk for heart disease.



Nutrition for Improved Body Composition

Firefighting is one of America's most important occupations. Unfortunately, as a group you also have one of the highest rates of obesity—ranking 3rd out of 41 occupations in the US for obesity prevalence. Obese and overweight firefighters are more likely to suffer from job-related injuries, heat stress and serious consequences like heart attacks. Being overweight can also negatively impact job performance. Firefighters have difficult challenges to overcome to maintain a healthy weight compared to the general population. Non-traditional work hours, inconsistent sleep, and an unhealthy fire station food environment can all increase the risk for obesity. While some of these factors are difficult to change, smart nutrition will decrease your risk for obesity and improve your body composition.



Nutrition for Safer and Superior Performance

Putting these elements together, you can see how smart nutrition can benefit your performance both on and off the job. Smart nutrition gives you energy, reduces your risk of heart disease and can help you achieve or maintain a healthy body weight. All of these factors benefit your individual performance and safety, and the safety of your entire crew. Eat smart to ensure that your crew and the people in the community who need your help can depend on you to perform at your highest level every single day.



Improving Fire Fighter Energy, Performance and Safety

by Chef Marshall O'Brien

The Premium Fuel Your Body Needs

Lean protein will be a part of your diet every day—chicken, beef, fish, tofu, turkey, lean hamburger, tuna, and eggs are all great protein choices. Beans and legumes are also excellent choices for firefighters. They're high in protein and fiber and have abundant vitamins and minerals. Stay away from protein sources that are high in trans fats such as sausage, pizza, cold cuts, breaded and fried foods. These foods cause brain fog, low energy, and long-term health problems. On the other hand, high-quality protein sources increase energy, help to build and maintain muscle mass, and aid in muscle recovery.

Vegetables and fruits should be a significant part of your daily diet. When properly prepared, they taste great and your body will soon learn to crave them. Enjoy a wide variety and you'll be taking in an abundance of vitamins and minerals that firefighters need for optimum energy and health. Choose vibrantly-colored vegetables, as they are generally more nutritious. For example, spinach and romaine are better for you than iceberg lettuce. Choose fresh or frozen vegetables when possible, as canned vegetables are higher in sodium and much less nutritious.

Whole grains are an excellent choice for the firefighter's plate. Stick with whole grain breads and tortillas, brown rice, and whole grain pasta. Stay away from white bread and white rice—you're eating calories without much nutrition. The best whole grain sources are those highest in fiber: barley, spelt, oats, quinoa, and wild rice, among others.

Healthy fats are essential for performance. While carbohydrates are the main source of fuel for short or low-intensity work, fats provide the energy for longer and/or high-intensity job duties. Healthy omega-3 fatty acids found in cold-water fish like salmon and tuna decrease inflammation in the body, reduce aches and pains, and lower your risk for heart disease. In small amounts, healthy fats—found in olive, coconut, safflower, and sunflower oil, as well as in foods like nuts, seeds, butter, avocados, and fish—add flavor and satisfy your hunger. They also help your body absorb important nutrients, so go ahead and eat your broccoli with a small amount of butter!

Not all fats are created equal, so you still want to avoid trans fats and refined oils. The easiest way to eliminate these fats from your diet—canola, lard, margarine and butter substitutes, hydrogenated vegetable oils, and shortening—is to avoid packaged cookies, crackers, snack foods, fast food, and frozen breakfast products.





Improving Fire Fighter Energy, Performance and Safety

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What Not to Eat

Foods with excess and added sugars are not good choices for several reasons. The sugar we eat in cakes, candies, cookies, breads, and sugar-sweetened sodas quickly raises blood sugar, and then boosts insulin levels. What goes up must come down: the quick burst of energy you get from a high-sugar food is almost always followed by low energy, fatigue, and reduced mental clarity—all dangerous symptoms for a firefighter. Long-term, high sugar intake leads to diabetes, heart disease, and weight gain, especially around the middle.

Want to get rid of that spare tire? Cut sugar out of your diet! Firefighters often receive gifts of sweet treats from families and friends. While it can be difficult to resist the temptation, know that by avoiding these foods, you also avoid sabotaging your energy level for the entire day. What you eat truly does make a difference in how you feel!

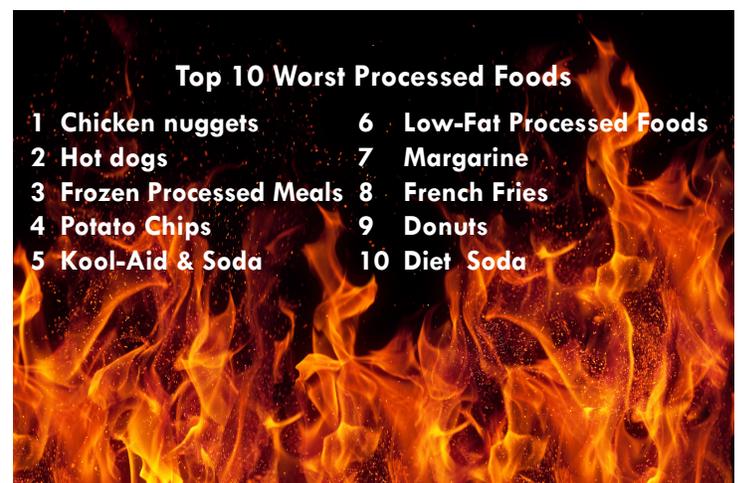
Fast food can often seem like a convenient and affordable option. While it may not negatively affect your pocketbook, know that your body pays a high price when you eat fast food on a regular basis. Fast food contains high levels of trans fats that are very harmful to every cell in your body and will slow your metabolism. Diets high in trans fats raise harmful LDL cholesterol, lower beneficial HDL cholesterol, and lead to central obesity (there's that spare tire again)—all factors that lead to chronic disease and can contribute to an early and costly death. Like sugar, fast food will negatively affect your energy level, mental clarity, and ultimately, job performance.

Caffeine in large amounts can be particularly problematic for firefighters. While one or two 8-ounce cups of coffee each day is just fine, too much caffeine leads to dehydration. Staying hydrated is absolutely essential for firefighters, so you'll want to avoid substances that interfere with this process.

Excess caffeine, especially from energy drinks and supplements, can elevate blood pressure and heart rate and, for some firefighters, can increase their risk for adverse cardiac events on the job. Additionally, too much caffeine can make getting to sleep more difficult. Turn to pages 8-11 for more information on the importance of hydration and better beverage options.

Processed and packaged foods, otherwise known as “man-made foods”, are increasingly popular choices among firefighters. This is not surprising, since most firefighters anticipate being interrupted in the middle of meals and have a need for quick, grab-and-go foods. Though it is not always easy to do, on most days, try to fuel your body with whole, unprocessed foods. Most packaged foods are high in fat, sugar, and additives, none of which are good for your body. Stick with simple meals based on real, fresh food.

Vending machines are found in some fire stations. It is important that there is a consistent message of smart nutrition throughout the fire station. The Fire Department can establish a recommended list of items that should be offered in these vending machines.





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Recommendation on Supplements

Dietary Supplements are not a substitute for a balanced whole-foods diet, which can provide the majority of nutrients your body needs. However, since nobody is perfect when it comes to eating a healthy diet, there are a few supplements that firefighters may want to consider incorporating into their routine as a nutritional insurance policy.

A high-quality protein powder. Whey protein isolate (not concentrate) is generally the best option for most people. After fighting a fire or performing strenuous exercise, firefighters should consume a good amount of protein for muscle repair and rebuilding. When a full meal is not possible, adding whey protein powder to water or as part of a smoothie can help to begin the recovery process. Avoid soy protein, as there is conflicting evidence regarding the safety of its long-term use. Don't overdo the protein powder—stick to a maximum of two scoops per day.

A high-quality fish oil supplement. Especially if you are not consuming cold-water fish like salmon several times a week, you should consider taking a fish oil supplement. Fish oil supplements are high in omega-3 fatty acids which reduce inflammation, improve joint mobility, and can reduce your risk of heart disease.

A high-quality multivitamin. If you feel you are not getting all the nutrients you need each day, the first step is to add more nutrient-dense foods like fruits, vegetables, and lean meat to your daily diet. If you continue to struggle with your diet or just want to ensure you are giving your body all the nutrients it needs, taking a multivitamin may be beneficial.

Know that quality makes a huge difference in whether a multivitamin will be helpful or not. Some companies incorporate cheap, non-absorbable forms of nutrients in their multivitamins just so they can be listed on the ingredient label. Don't be fooled by this tactic. Look for multivitamins derived from whole foods rather than synthetic vitamins and make sure you purchase your multivitamin from a reputable company.

Vitamin D—the sunshine vitamin—plays many important roles in the body. It helps maintain healthy bones, supports the immune system, and may help prevent a number of chronic diseases including depression, heart disease, and cancer. Firefighters in northern climates and those who spend most of their time indoors will probably need a supplemental source of Vitamin D. Work with a healthcare provider to test your current Vitamin D levels and to determine the appropriate amount for your personal needs.

Nutrition to Reduce Inflammation

Are you struggling with daily aches and pains or a severe back injury? You are not alone. Back problems and other musculoskeletal issues are common ailments among firefighters. Living with pain does not have to be permanent. In combination with other therapies, eating an anti-inflammatory diet can go a long way toward reducing both minor and severe aches and pains. Follow these tips to prevent or heal inflammation in your body:

1. Eat healthy fats, especially the omega-3 fats found in fatty fish like tuna and salmon.
2. Consider supplementing with high-quality fish oil, especially if you do not regularly eat fish. The fatty acids in fish oil help to lubricate joints and help keep vertebrae and spinal discs supple.
3. Avoid foods high in sugar, trans fats, and refined oils. Think of everything you put in your mouth as either creating or reducing inflammation. Sugar and trans fats damage cells and create more inflammation and refined oils contain large amounts of inflammatory omega-6 fatty acids.
4. Vegetables and fruits with bright colors, like sweet potatoes, berries, and spinach, contain large amounts of anti-inflammatory nutrients. For best results, try to eat nine servings (4.5 cups) of these foods each day.
5. Add anti-inflammatory spices like turmeric, garlic, and ginger to your foods.
6. If you drink alcohol, stick with dry red wine, which contains the anti-inflammatory compound resveratrol. Limit yourself to one (women) or two (men) 5-ounce glasses or, better yet, avoid alcohol entirely. Don't consume alcohol the night before a shift, as even a small amount increases your risk for dehydration.



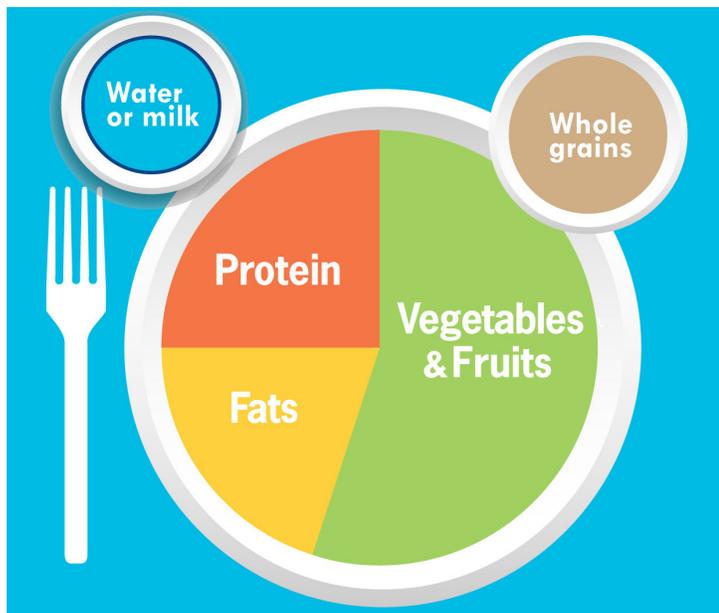


Improving Fire Fighter Energy, Performance and Safety

by Chef Marshall O'Brien

Firefighter Nutrition Essentials

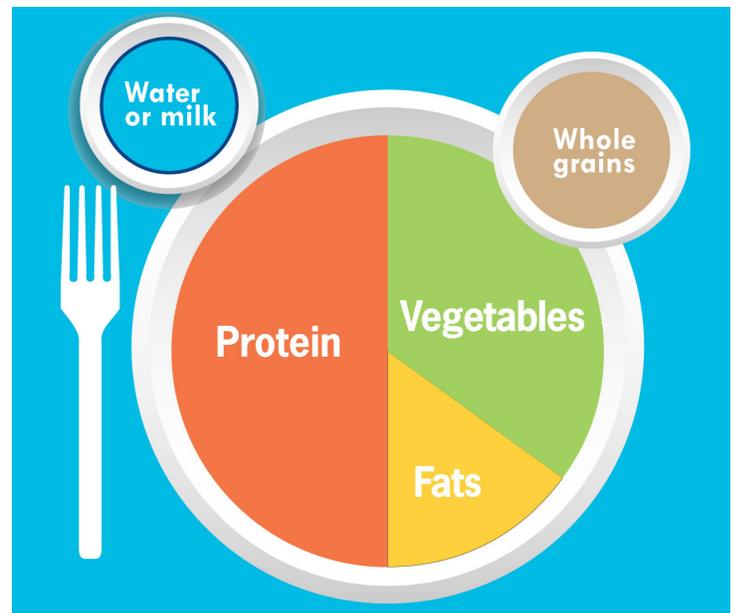
1. **Follow Chef Marshall's program on the recommended foods to eat and foods to avoid.**
2. **Monitor your activity level and fuel-up accordingly.**
Depending on the day and activity level, firefighters need a varying amount of fuel to operate at peak efficiency. On busy days, the key to maintaining a high energy level is frequent "fill ups" in the form of 4 to 5 meals, 3 to 4 hours apart. This steady supply of calories and nutrients helps to build and repair muscles and tissues and to replace depleted energy supplies. On less-active days, it is more important to monitor portion size. Listen to your body and eat until satisfied, but not stuffed.
3. **Balance your meals.** On most days, when you assemble your meals, aim to make your plate look similar to this:



Chef's Plate for Every Day

A balanced diet for most people contains approximately 55% carbohydrates, 25% protein, and 20% healthy fats. As you can see, the majority of your carbohydrates should come from vegetables and fruits. As we age, some people find they don't tolerate carbohydrates as well. If you have blood sugar problems, pre-diabetes, diabetes, or other symptoms of insulin resistance, (that spare tire around the middle) you may want to consider decreasing the carbohydrates in your diet. This does not mean you should eat fewer vegetables and fruits! Instead, limit your consumption of highly-processed carbohydrates like breads, pastas, rice, cakes, and cookies.

4. **Focus on protein for post-fire/emergency recovery.**
The 15-30 minutes after a fire or high-intensity activity are very important—you need to start rehydrating and consuming protein for muscle repair and rebuilding. Consuming protein in this first 15-30 minutes triples the amount of glycogen in your system over waiting 1-2 hours to start consuming protein. Hydration should also be started within 15 minutes by using water or sports drinks to replace the electrolytes your body has lost. The salvage truck will have Gatorade® and Honey Stinger® protein bars for your use.



Chef's Plate for Post-Fire/Emergency Recovery

From the plate above, you can see that after an intense day on the job, the focus of your meal should be high-quality protein sources. Carbohydrates are still an important part of this meal since they help to replenish liver and muscle glycogen (energy stores). Again, many people think only of bread and pasta when they hear the word carbohydrate, but the best sources of carbohydrates are those that nature gave us—fruits and vegetables!

5. **Pack smart.** In the event of a fire or other emergency, it is a good idea to have high-carbohydrate snacks accessible that you can quickly grab and eat on the way to the job.



Improving Fire Fighter Energy, Performance and Safety

by Chef Marshall O'Brien

Improving the Fire Station Food Environment

Research shows that eating behaviors of firefighters are influenced by working conditions as well as the food “culture” of the fire station. Whether we like it or not, most of us are influenced by our peers, including firefighters. Remember that smart nutrition leads to better performance and greater job safety. Thus, smart nutrition is not just important for you as an individual, but it's important for everyone on your crew.

Ask yourself:

- What is the food culture in your fire station? If some individuals want to eat healthy but the group consensus is fast food, does everyone have to go along with the group?
- Is there healthy food available in the fire station for meals and snacks or are the cupboards and refrigerator full of processed, high-calorie, low-nutrient junk food?
- What is the quality of meals served in the firehouse? What are the portion sizes? Is it all about quantity rather than quality?

It is time to change the fire station food environment and culture. You may think you should “eat macho to be macho”, but it's not so macho when you can't lay hose or pull a body because of your food choices. It can be life-threatening to you, your co-workers, and to the community.

The idea that firefighters need to eat high-calorie foods in order to meet job demands is becoming less relevant now that over 80% of calls are not fire-related and are generally less physically demanding. This doesn't take away from the importance of the job. It just means that many firefighters need to monitor their food choices and portion sizes more closely than they did in the past. Huge portion sizes should no longer be associated with strength. Real strength comes from maintaining a healthy weight and increasing your energy level and agility.

Family-style meals can be a healthier option, but not always. Meals made with cheap, low-quality ingredients can be just as unhealthy as fast food. Cooking healthy meals can be especially challenging in the firehouse environment where frequent call interruptions impact both the types of meals served and eating habits. Healthy recipes often require additional preparation and cooking time compared to less-healthy dishes like white pasta or burritos. Firefighters often feel forced to eat food too quickly, in case they are called away to an emergency. Fortunately, Chef Marshall recognizes these challenges and has developed recipes for your fire station that are quick, easy and nutritious.

Here are other ideas to help you change the food culture in your firehouse so you can look, feel and perform better as a team.

Unhealthy Food Practices in the Fire Station	Alternative Plan
Grabbing a quick bite of fast food	Choosing healthier restaurants that serve sandwiches, soups and salads
Constant snacking and/or snacking late at night on unhealthy food	Scheduling one or two snacks during the day and skipping the constant snacking. Keeping healthier snack options on hand like whole grain crackers, deli meats, yogurt, trail mix, and beef jerky instead of chips, ice cream, cookies, and doughnuts.
Peer pressure to eat large portions or unhealthy foods	Going against the grain, even if you get a bit of flack initially. You will gain respect in the long run when you look better, feel better and perform better.
Cooking family-style meals in huge portions with unhealthy ingredients	Keeping meals simple, emphasizing quality over quantity.
Captains who practice unhealthy behaviors (i.e. eat unhealthy foods and don't exercise)	If you are in a leadership position, recognizing that you set the tone for the entire crew. Doing your best to support healthy eating and physical fitness.

Pre-Fire/Emergency Snack Ideas

- Honey Stinger® energy chews
- Easy-to-grab fresh fruit—apples, pears, grapes
- GoGo squeeZ® applesauce pouches
- Energy bars—a few of the more natural, commonly-found brands include: KIND® bars, Larabar®, Kashi® chewy granola, Clif® bars, Honey Stinger bars.



Improving Fire Fighter Energy, Performance and Safety

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Firefighter Hydration Plan

Hydration is the most important aspect of firefighters' nutrition program. Whether you are fighting fires or responding to emergency situations, staying hydrated is critical for optimal performance.

Firefighters are at extreme risk for dehydration. The physical demands of the job, working in high temperatures, and the use of protective clothing all increase the risk of dehydration. Because you must be ready for high temperatures and/or strenuous work at a moment's notice, staying properly hydrated at all times is critical.

Remember, you can't hydrate at the last minute! Good hydration takes 8-12 hours and total hydration takes 18-24 hours. If you wait to hydrate, you are putting yourself at risk.

The body and the brain are made up of approximately 75% water. Dehydration occurs when your body loses more water than it takes in. This can lead to major problems if it goes unchecked, as your body won't have enough fluids to carry out normal functions. Research shows that even mild dehydration leads to muscle fatigue, impaired performance, and decreased mental clarity—all extremely important factors when fighting fires or responding to emergencies.

Water plays a major role in regulating body temperature, so moderate to severe dehydration puts you at higher risk for heat cramps, heat exhaustion, heat stroke, and even death.

Dehydration can play a role in work injuries and more importantly, cardiac events—the #1 killer of firefighters nationwide. When you are dehydrated, your heart has to work harder to do its job. Even healthy firefighters are at a higher risk for adverse cardiac events when dehydrated.

Finally, proper hydration helps protect your lungs from smoke, dust and other environmental pollutants you may be exposed to on the job. Your lungs need water to prevent air passages from drying out. Dehydrated airways are more reactive to dust, mold particles, smoke, and other pollutants. Proper hydration helps to dilute phlegm in the airway, making it easier to cough out smoke or dust particles. Given firefighters' excessive exposure to lung irritants and toxic substances, even when not fighting fires, it is essential that they stay hydrated to minimize their risk of lung disease.

As you can see, not only is proper hydration critical for optimal performance, but it can also be a matter of life and death. If you do not properly hydrate, you not only put your life at risk, but also the lives of your crew and other people in the community who depend on you to perform at the top of your game.

Dehydration risk is compounded by the fact that many firefighters report to duty already dehydrated. Alarmingly, one study found that over 90% of firefighters were dehydrated prior to any physical exertion. Other studies have shown similar findings. Now that you know how important it is to stay hydrated, ask yourself—“What can I do prevent dehydration and avoid being part of this 90%?”



Hydration Tips

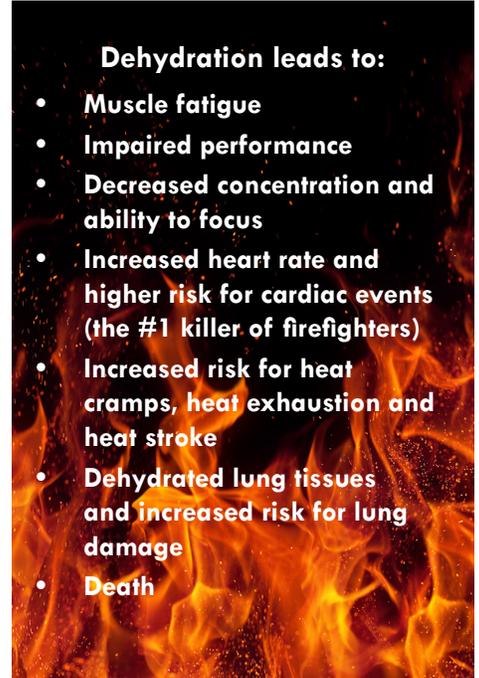
- 1. Focus on staying hydrated every day.** Proper hydration takes at least 12 hours, so drinking extra water before your shift or on the way to a job won't be effective. Your performance will suffer. By the time the alarm sounds, it is too late to hydrate. To determine how much you need to drink on a typical day, follow this formula:

$$\frac{\text{Your body weight}}{2} = \text{Ounces of water needed per day}$$

For example, if you weigh 200 pounds, aim to drink 100 ounces of water each day. That translates to approximately 12 to 13 cups of water. Now, knowing how much water you need each day, purchase a sports water bottle and calculate the number of times you'll need to refill it to meet your daily requirement. You may want to mark one-hour intervals on the bottle as a reminder that, for instance, your first bottle should be empty by noon, and your second by midafternoon. Train yourself to have a water bottle within arm's reach all the time while on the job. Many stations have drinking fountains. Make sure they're being properly maintained so they can have the best-tasting water available at all times.

- 2. Avoid excessive caffeine and other stimulants.** The caffeine in beverages like coffee, tea, soda, and energy drinks acts as a diuretic in the body, causing the kidneys to excrete more water. This can lead to dehydration, especially if you are not careful to replace the lost fluids. Excessive caffeine also depletes important electrolytes in the body like calcium, sodium, and potassium. As a firefighter, it is important to maintain adequate levels of electrolytes at all times to guarantee that your body is prepared in the event of a fire. Just 30 minutes of firefighting can lead to a dangerous loss of both fluids and electrolytes.
- 3. Include hydrating foods.** In addition to drinking the recommended amount of water for your body weight, it is a good idea to include hydrating foods in your diet. Most hydrating foods also provide essential minerals, sugars and vitamins that are lost during activity. Try to include one or two hydrating foods with each meal—most fruits and vegetables are high in water. The table below lists several foods with the highest water content. In addition to these hydrating foods and other fruits and vegetables, choose dishes that call for a lot of water such as soups, stews—even oatmeal—as they will help you stay hydrated.

Hydrating Food	Percent Water
Cucumbers	96%
Celery	95%
Tomatoes	94%
Strawberries	92%
Watermelon	92%
Broccoli	91%
Grapefruit	91%
Avocados	81%
Yogurt	80%



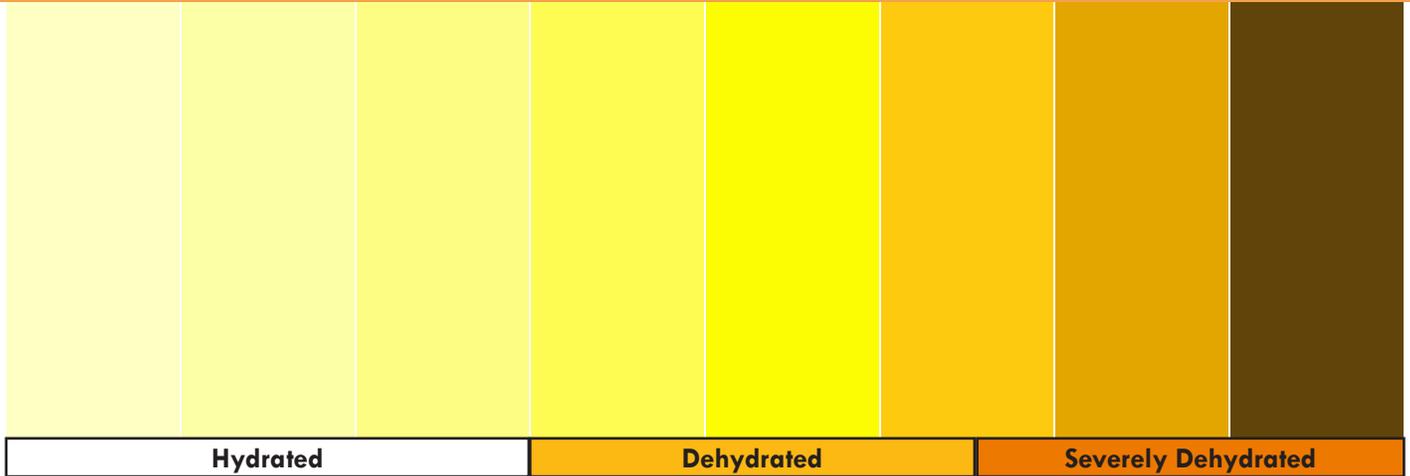


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Hydration Chart

Monitor your urine color to know if you are drinking enough water



Hydration Tips continued

- Top off your hydration on the way to the fire.** While it's true that you can't fully hydrate right before a big event, drinking water on the way to the fire can help prepare your body for the strenuous work ahead. 5 to 10 ounces of water is a good amount to make sure you are hydrated but not waterlogged.
- Take water breaks during the fire.** Aim to drink 10 to 12 ounces of water or Gatorade at every break. These breaks can also be used to replenish your energy stores by taking an energy chew. Honey Stinger chews are recommended for high quality and great taste; find them in the salvage truck.
- Don't rely on thirst to determine if you are properly hydrated.** In general, the brain does not recognize signs of thirst until after you have lost 1% of your body weight in water. At this level, you are already mildly dehydrated and can experience symptoms of muscle fatigue and decreased cognition. One way to determine your hydration status is to monitor the color of your urine. This might sound strange, but it works. We have provided a chart for you so you can get a good idea of what your urine should look like when you are adequately hydrated. If you take supplements (especially B-vitamins) know that this chart may not be an accurate indicator of your hydration status.
- Keep physically fit.** Well-conditioned firefighters are better able to deal with strenuous activities and high temperatures. Firefighters with a greater percentage of muscle mass are generally better hydrated, due to the fact that muscle tissue is composed of approximately 75% water while fat tissue contains 25% water or less. Physical fitness is important to many aspects of the job and better hydration is yet another benefit.

- Stay hydrated even on days off.** Treat your day off like an athlete would treat the day before a big game. Continue to make hydration a priority by drinking the recommended amount of water for your body weight. Avoid excessive alcohol intake—no more than one drink for women and two drinks for men. Alcohol interferes with the complex systems that keep water and electrolytes in balance, so drinking alcohol the night before your shift almost always ensures you will be dehydrated the next day. Don't put yourself in a bad situation.
- Refer to your station's protocols for re-hydration.** Your fire station should already have a specific protocol for cooling and re-hydration during and after a fire. As a general rule, for each pound of body weight lost, re-hydrate with 24 ounces of water. Electrolytes like sodium and potassium should also be replenished. Cooling techniques should be implemented immediately after the fire in order to lower body temperature and to help reduce fluid loss. One study found that wet towels were a very effective cooling method and more practical than some of the other techniques used, such as special cooling chairs. Look to your captain or superior for more information on your station's specific protocols.

Signs of Dehydration

Thirst (not an accurate predictor)	Decreased urine output
Dry, sticky mouth	Dark yellow or amber-colored urine
Fatigue	Confusion
Headache	Low blood pressure
Dizziness or lightheadedness	Rapid heart beat
Lack of sweating	Shriveled skin that doesn't bounce back when pinched



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by Chef Marshall O'Brien



Sports Drink Essentials

Chef Marshall was asked by numerous Minneapolis firefighters which sports drinks are the best. It's not surprising that people are confused, with so much conflicting information on their benefits and detriments and so many available options. It is our goal at the Chef Marshall Group to help end this confusion once and for all.

What is the purpose of a sports drink?

A basic sports drink will contain the following components: water, carbohydrates, and electrolytes (sodium and potassium). When you participate in prolonged or intense physical activity, the body loses all three elements. A good sports drink should contain water to replace fluids, carbohydrates to replace energy stores, and electrolytes to restore electrolyte balance. Carbohydrates and electrolytes in sports drinks work together to increase fluid absorption in the small intestine, which helps re-hydrate the body more quickly. The sodium in sports drinks also initiates the thirst response, encouraging the consumption of additional water. For these reasons, sports drinks can be more effective in restoring fluid balance than water alone, especially when used after intense physical activity.

Who should use sports drinks and when?

As a general rule, firefighters who participate in physical activity lasting longer than 40 minutes can benefit from the use of sports drinks. This is slightly different from the general population, for whom we recommend limiting sports drink use to activities lasting longer than 60 minutes. Because hydration is so important for firefighters, it is our belief that firefighters can be more liberal in their use of sports drinks. This doesn't mean that you should forgo water and sip Gatorade® all day long. Water is still the most important beverage to consume day in, day out. Limit the use of sports drinks for those times when you participate in physical activity or when you feel extra hydration is necessary.

What should you look for in a sports drink?

Though there are many different choices, selecting a sports drink doesn't have to be overwhelming. To choose an effective sports drink, look at the ingredients label and nutrition facts and follow these guidelines:

- Choose one with 50 to 80 calories per serving. Fewer calories may not adequately replace energy stores. Drinks with additional calories are too concentrated and lead to slower absorption, less effective re-hydration, and possibly abdominal distress.
- Look for sports drinks with 6 to 8% carbohydrates or about 14 to 20 grams of carbohydrates per serving. This amount is most effective for quick re-hydration.
- Look for sports drinks with glucose or sucrose as the carbohydrate source. These forms of sugar are quickly absorbed and less likely to lead to abdominal distress than other carbohydrates such as high-fructose corn syrup.

What types of sports drinks should you avoid?

- Sugar-free or reduced-calorie sports drinks. While it may seem counter-intuitive, the calories in sports drinks serve the important purpose of replenishing energy and helping re-hydrate more quickly. Thus, drinking reduced-calorie and diluted sports drinks defeats the purpose.
- Carbonated sports drinks or those that contain caffeine. Carbonation can irritate the esophagus and stomach lining. Caffeine causes the kidneys to excrete more water, so it certainly does not belong in a beverage intended to re-hydrate.
- Fruit juice. Juices are not ideal for re-hydration as they contain too many carbohydrates and not enough electrolytes—sodium. They are not absorbed as quickly as sports drinks, leading to abdominal distress. Coconut water has become quite popular. While it is a great drink on occasion, it is not the best choice for re-hydration because it contains a large amount of potassium but little sodium.

Recommendation from the Chef

After examining several popular sports drinks, we have found the Gatorade G® series to be the best overall sports drink for firefighters. Though there are other good sports drink options, many cannot be found in regular grocery stores or convenience stores. Gatorade G series has the proper mix of carbohydrate and electrolytes and is widely available. Make sure to select the original Gatorade G, not the reduced-calorie G2®.



Improving Fire Fighter Energy, Performance and Safety

by Chef Marshall O'Brien

Firefighter Sleep Plan

Sleep is crucial for firefighters. Firefighters regularly put the needs of others before their personal needs—including the need for a good night's sleep. It is important to understand that everybody, including firefighters, needs adequate sleep to perform at optimal levels. Firefighters are at extreme risk for sleep deprivation. The long, non-traditional work hours and the need to perform in situations where one's actions can have life-or-death consequences contribute to lack of sleep.

Sleep deprivation is no laughing matter; it's a major safety hazard that can have a negative impact on job performance and long-term health. It is not unusual to see a recent firefighter retiree who looks younger and has new-found energy. It's because of sleep! Why can't active firefighters have this, too?

Sleep Requirements and Trends

While everyone is different, most adults need between 7 and 9 hours of sleep each night. According to the Centers for Disease Control, over 41 million Americans are sleep-deprived and 30% of adults sleep less than 6 hours per night. Firefighters—who often work 24-hour shifts and who have other jobs or family responsibilities—are at an even greater risk for sleep deprivation. While fire stations do provide sleeping accommodations, fire calls and other disruptions make getting a good night's sleep is extremely difficult.

And, although the 24-hour shift offers some benefits (more days off, decreased commute time), the body's biological clock is not designed to operate on this schedule. Our natural circadian rhythm tells the body that we should be awake during the day and asleep at night. Thus, the work schedule of most firefighters goes against the natural order of their bodies. While the firefighter shift schedule is unlikely to change, it is important that firefighters take extra measures to protect themselves from sleep deprivation. Every system in the body suffers when one does not get enough sleep. Sleep is not a luxury; it is an essential human need, along with oxygen, food, and water.

Consequences of Sleep Deprivation

- Poor performance is possibly the most critical outcome of sleep deprivation for firefighters. Unlike most Americans, firefighters cannot afford to have an "off" day. Your crew depends on you to always be on your game and even small sleep deficits can lead to impaired alertness and inability to make quick decisions.
- Post-shift fatigue and accidents. Not only is sleep deprivation responsible for more on-the-job accidents, but it also increases the risk for accidents after your shift. Research shows that being awake for 24 hours—a normal



shift for firefighters—produces the same impairment as having a blood alcohol level of 0.10 (legally too drunk to drive).

- Depression, anxiety, and overall increased feelings of stress can be caused by sleep deprivation. In turn, depression and anxiety often result in a lack of sleep. This is a vicious cycle which can become a serious problem if not addressed. During sleep, the body makes the brain chemicals that regulate our mood and provide us with a sense of well-being. As a firefighter, it is critical that you find ways to relax and minimize stress in order to avoid sleep problems and serious mood disorders.
- Weight gain and obesity are strongly related to sleep deprivation. Lack of sleep disrupts the hormones that regulate appetite (leptin and ghrelin) and increases cravings for sugary, processed carbohydrates. Lack of sleep also slows metabolism and makes your body more likely to store the food you eat as fat, rather than burning it for energy. After a night of little sleep, do you notice that you crave more junk food? One of the best ways to reduce cravings and lose weight is to make sure you are getting at least 8 hours of sleep every night.
- Heart disease is known to be the #1 killer of firefighters and lack of sleep could be a major contributing factor. Lack of sleep can result in increased heart rate and blood pressure, putting extra stress on the heart, especially when combined with physically demanding tasks. Short and long-term sleep deprivation leads to high levels of inflammation in the body—a major risk factor for heart disease.
- An overall higher risk for death. The bottom line is that sleep deprivation puts you at a much higher risk for early death. Research shows that people who sleep seven hours or less a night have an increased risk of death compared to those who sleep eight or nine hours. Sleep is so important!



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Sleep Solutions

Fire departments have a responsibility to teach their employees how to manage sleep deprivation. Burnout, poor attitudes, and health problems stemming from a chronic lack of sleep are just some of the consequences of not addressing this problem. Education should begin with the first day of orientation and be presented as part of ongoing health and safety programs. Additional suggestions for managing firefighter fatigue:

- Evaluate crew sleeping quarters for darkness, quiet, temperature control, and overall comfort. Make upgrades as necessary to provide the best sleep environment possible.
- Allow tired firefighters an extra hour or two of sleep, even after shift change, to help them stay awake on their drive home.
- Modify work schedules to reflect increasing alarm loads.
- Provide additional staffing and response units during periods of peak-alarm activity.
- Encourage napping as an effective coping strategy. Naps as short as 20 minutes can be effective. Two-hour naps during around-the-clock operations are highly restorative.

Firefighters are often under extreme stress and may have difficulty falling or staying asleep, even on their days off. Because they are conditioned to react to various alarm sounds at work, it is very common for firefighters to flinch or wake up when they hear similar noises at home. Despite the challenges, quality sleep is the only way to combat sleep deprivation. A full night of quality sleep will boost your performance, mood, cognition, and energy level. Follow these tips to improve your chances of getting enough quality sleep every night:

1. **Try to maintain a consistent sleep schedule.** On your days off, (including weekends) try to go to bed at the same time each night, preferably before 11:00 p.m. A consistent sleep schedule is important for maintaining the body's natural circadian rhythms.
2. **Use days off wisely and rest when possible.** It may be helpful to explain the importance of sleep to your family so that they can understand your need to "catch up" on some much-needed sleep.
3. **Take advantage of opportunities for sleep whenever possible.** Naps as short as 20 minutes are beneficial; a two-hour nap during longer shifts can restore mental and physical abilities.
4. **Environment is key for quality sleep.** Blackout curtains are especially important for firefighters who need to catch up on sleep during daytime hours. Keep the room cool and quiet and invest in a quality mattress, comfortable bedding and pillows.

5. **Seek help for underlying sleep disorders.** Shift workers, including firefighters, have an increased risk for sleep apnea and other sleep disorders. Sleep apnea interferes with normal breathing and can cause significant sleep disturbances and chronic health problems. If your spouse complains about your snoring, you may have sleep apnea!
6. **Lay off the electronics several hours before bedtime.** Electronics and bright lights reduce the body's production of melatonin, a hormone that tells the body it's time to turn in. Excess visual and mental stimulation puts the body in a state of stress and often leads to difficulty falling asleep. Reading a book (the old-fashioned paper kind) is a great way to induce sleep.
7. **Physical activity** is great for increasing the quality and quantity of sleep, but it is best to avoid high-intensity exercise near your usual bedtime. Exercise raises stress hormones and body temperature and, for some people, can interfere with quality sleep. Proper cool-down can combat the problems associated with late night exercise.
8. **Find ways to relax and reduce stress** as much as possible.



Sleep and Fitness Help Reduce Cardiac Risk

Firefighters don't get to warm up before they hit the ground running. They often go from rest to full exertion in a matter of minutes. Heart rates can jump from 50-60 beats per minute (bpm) during sleep to 160-180 bpm immediately following an alarm. This sudden and marked increase in heart rate puts a lot of strain on the heart. In fact, research shows that firefighters are 14 times more likely to suffer a sudden cardiac event after an alarm.

A physically-fit firefighter who has better heart rate variability can handle shock to his/her system much better. This means that both sleep and physical fitness are important factors for reducing cardiac risk in firefighters.



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Nutritional Solutions for Sleep

1. Avoid alcohol for several hours before bedtime. You may think that a glass of wine helps you sleep, but not all sleep is created equal. Alcohol-induced sleep is not the quality, restorative sleep that your body needs.
2. Drink your coffee in the morning and limit your use to two 8-ounce cups a day. Caffeine can stay in the system for up to 12 hours, so having coffee after lunch could seriously disrupt your sleep at night.
3. Try a high-quality magnesium supplement such as magnesium glyconate. Magnesium is an effective muscle relaxer and can be an especially effective sleep aid for firefighters who suffer from body aches, pains, or restless legs.
4. Avoid over-the-counter and prescription sleep aids. These generally do not produce the quality sleep your body needs. They can also become addictive.
5. Eat sufficient high-quality protein like turkey, fish, and grass-fed beef throughout the day. Protein breaks down into amino acids, the building blocks for neurotransmitters, which are very important for sleep.
6. A small bedtime snack can keep blood sugar balanced and keep you from waking up frequently during the night. Large meals 2-3 hours before bed should be avoided, as they can lead to heartburn and other gastro-intestinal disturbances.

Firefighter Cognition Plan

Many firefighters work hard on their bodies, but do not have a nutrition plan for their minds. Remember that a healthy brain is just as important as a healthy body for peak performance—particularly for firefighters who often have to make tough, split-second decisions.

To decrease your chances of making crucial on-the-job errors, it is important to optimize both your mental and physical health. Because brain health is highly dependent on physical health, anything you do to improve your physical health will also benefit your cognitive function. This means that the first step for improving your brain health is to follow the program guidelines for nutrition, sleep, and hydration. Taking these additional steps can also help to boost your brain power and decision-making skills:

1. **Daily exercise is an important piece of the cognition puzzle.** Exercise doesn't just strengthen your muscles and heart; it also strengthens your mind. Although the job is sporadically active, many firefighters do not get the recommended amount of daily exercise.
2. **Exercise positively affects the brain in several ways:** It increases oxygen and blood flow to the brain, stimulates the growth of new brain cells, reduces stress hormones, and releases neurotransmitters that can help alleviate depression and anxiety. Exercise also enhances short-term memory and reduces the risk for long-term cognitive problems and more serious forms of dementia.

As a general rule, aim for 30-60 minute of physical activity each day. Rotate activities so that you incorporate aerobic as well as strength training workouts each week. If you don't have a large block of time, fit physical activity into your day whenever possible. Even brief bouts of activity can provide many benefits to your brain. Remember, doing something is better than doing nothing at all!



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- 3. Stress reduction techniques can greatly enhance cognition.** Excessive stress overwhelms the brain and can hamper your ability to focus and make good decisions. While stress can be difficult to manage, there are several proven techniques to help manage stress beyond good nutrition, sleep, hydration, and exercise. For many, deep breathing exercises, stretching, meditation, relaxing hobbies, and social interactions with family and friends can also significantly lower stress. This is so easy—as little as five minutes a day will reduce the stress in your life! Whether you're new on the job or a 20-year veteran, you are part of one of the most important guardians of our community. If you are not taking care of yourself, you can't take care of the community.
- 4. Avoid activities that will shrink your brain.** Excessive alcohol use, drugs, and smoking can literally shrink your brain. If you struggle with these addictions, it is important you seek help. The health of your brain depends on it!
- 5. Incorporate brain-boosting foods.** Vegetables, fruits, lean protein, and healthy fats are nutrient-dense, so they boost cognition. The following foods can be especially good for cognition as they contain healthy fats that increase blood flow to the brain and abundant antioxidants that protect the brain: walnuts, berries, salmon, tuna, spinach, sweet potatoes, and avocados. Several research studies have shown fish oil supplements benefit cognition, memory, and mood.
- 6. Avoid brain-busting foods.** Fast foods and highly-processed packaged foods are very low in the nutrients needed for healthy brain functioning. Foods high in sugar also leach vitamins and minerals from your body and deprive your brain of precious nutrients. Avoid making these foods a regular part of your diet.



Tips for Putting Your Personal Program Together

1. Develop a routine and stay with it. The recommendations in this program are not meant to be quick fixes. Consistency is the key for long-term health and safety.
2. Make changes at your own pace. Choose one or two recommendations each week and really commit to making those changes. Before you know it, small changes will add up to major health improvements.
3. Hydration and sleep are the most important factors for firefighters. Make improvements to these two factors first, and you will find it easier to eat a healthy diet.
4. Eat real food. Try to follow the specific guidelines when possible, but the most important nutritional goal should be to eat whole, unprocessed foods whenever possible.
5. Hydration, hydration, hydration! Staying hydrated is of utmost importance for firefighters. Find ways to consume the recommended amount of water every day.
6. Plan ahead. If you have to hunt for food or water, you will go without it or eat the wrong things. Have snacks packed the night before your work shift to minimize last-minute scrambling.
7. Stay ahead of hunger. Plan to eat every 3 to 4 hours, except when you are sleeping. This will keep your blood sugar balanced and ensure your body will be prepared in the event of a fire or other strenuous activity.
8. Focus on both physical and mental health. Both aspects are important for optimal performance.
9. Remember three key time periods:
 - a. Get a quick snack and hydrate on the way to the fire.
 - b. During your break at the fire, drink Gatorade or water, and eat Honey Stinger energy chews.
 - c. Right after the fire, hydrate and eat a 10-gram Honey Stinger protein bar.



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Conclusion

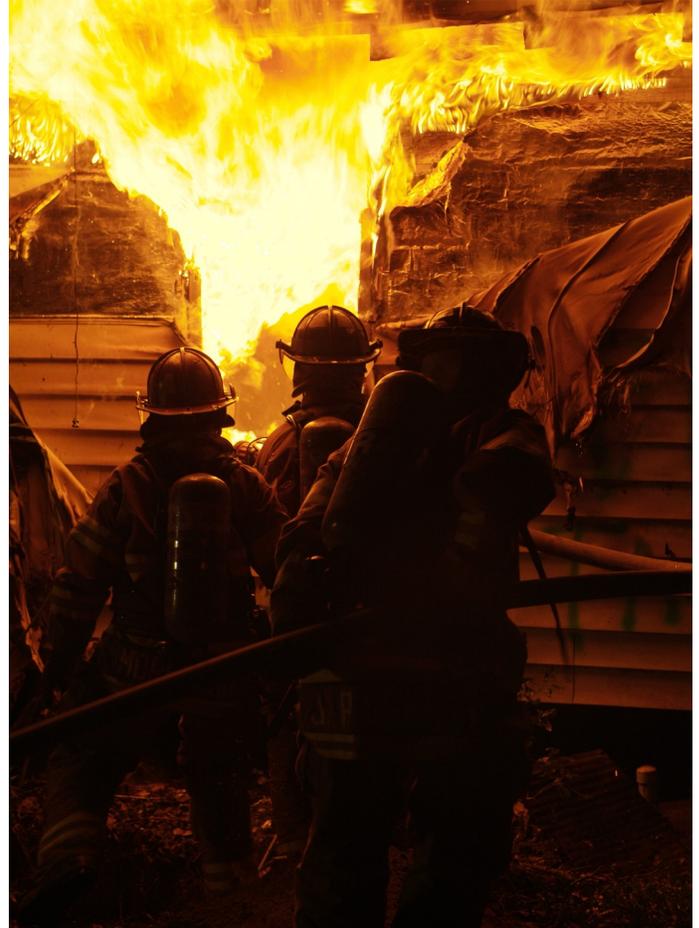
Chef Marshall O'Brien has developed this program to provide firefighters with a simple, three-step program for peak performance and health: Nutrition, Hydration, and Sleep. Firefighters are one of the most valuable assets to our communities. As real-life heroes who save lives and property, we owe it to them to provide the tools to perform at peak levels, live pain-free and satisfying lives, and to keep them safe.

Significant data proves that proper hydration, smart nutrition, and adequate sleep lead to improved energy, performance, and safety for firefighters. This all starts with the city, the fire chief, and his staff recognizing this, promoting awareness, and creating an environment that encourages these changes. It is then up to the firefighters themselves. If they care about their coworkers' safety and their own safety, they need to encourage each other to work toward making the changes required to achieve these goals.

Unlike many occupations for which nutrition is the primary focus, firefighters need to focus on hydration and sleep first. Being dehydrated or mentally groggy from lack of sleep creates a huge safety risk for firefighters. Because it takes as long as 24 hours to achieve total hydration, firefighters need to follow a program of ongoing hydration. This requires awareness and development of a routine—a quick and easy change. Getting better-quality sleep is more difficult because of the uncertainty of when the next fire or emergency will occur. Firefighters can improve their sleep by eating foods and drinking beverages that promote sleep instead of inhibiting it and by creating sleep areas in the fire station that make it easier to fall asleep quickly.

Solving nutrition and body weight issues requires more time and effort. Again, it starts with awareness, but changes are more likely to occur because of peer pressure than for any other reason. Because of the safety risk for the entire squad, being in good shape and practicing smart nutrition is everyone's responsibility. Being in a situation where your buddy is unable to rescue you is a real concern. In addition, being a firefighter takes a toll on your body, so while the tasks of the job do not change, over time, your body becomes less able to perform them.

It is all about small steps. Helping someone move from excessively overweight to overweight has a greater effect on safety than moving someone from overweight to their recommended weight. The department needs to support these efforts by providing recipes at the fire stations and recommendations on smart eating and snacking for firefighters when they eat outside the station.



Solving this issue also requires every firefighter to make smart decisions and encourage coworkers to do the same—the number one reason people make changes is in response to what their peers think. We need to foster a culture of smart eating and drinking that leads to a safer fire station.

This will not happen overnight. It starts with awareness and an environment that supports and encourages these changes. It also requires regular monitoring and reinforcement: use biometrics to show change; offer refresher courses; designate cheerleaders in each fire station (the more, the better). In time, this will become a new way of life for most of your firefighters and create a safer and healthier environment for all.

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Smart Nutrition for Improved Energy, Performance and Safety

Daily Recipes & Post Fire/Major Event Recipes



Smart Nutrition for Improved Energy, Performance and Safety

Beef Spaghetti Sauce with Spaghetti Squash, and Sautéed Asparagus with Parmesan Cheese

Serves 8

Ingredients:

4 medium spaghetti squash, cooked
4 tablespoons butter
3 cups medium yellow or white onion, diced
3 cups carrots, peeled and diced
1-1/2 cups green bell pepper, diced
2 bay leaves
3 pounds ground beef, 90% lean/10% fat
3 tablespoons garlic, minced
4 tablespoons tomato paste + 1/2 cup water, combined
4 – 14.5 ounce cans diced tomatoes
1-1/2 tablespoons dried leaf oregano
1-1/2 tablespoons dried leaf basil
3/4 tablespoons dried leaf thyme
Salt and pepper, to taste;



Directions:

Cut squash in half, remove seeds, and cook in microwave for 5-7 minutes or roast in oven until tender about 30-40 minutes. Or do a combination of both.
Heat large skillet on medium heat. Add butter and onions, carrots, bell pepper and bay leaves and cook until onions soften, about 3 minutes.
Add ground beef and garlic and cook for 5 minutes while stirring.
Add tomato paste and water and stir. Then add crumbled oregano, basil and thyme.
Add canned diced tomatoes, stir thoroughly and bring to a boil; simmer for 20 minutes. Remove bay leaves and add more water, if needed.
Season with salt and pepper, as needed.
Portion on top of cooked spaghetti squash and serve.
This can be made a day ahead or the day of serving.

Sautéed Asparagus with Parmesan Cheese

Serves 8

Ingredients:

2 tablespoons butter
2-1/2 pounds asparagus, cleaned, with woody ends removed, chopped in 2-3 inch pieces
3-4 tablespoons Parmesan cheese
Fresh lemon juice, to taste

Directions:

Heat butter in large skillet on medium-high heat. Add chopped asparagus and cook until bright green and tender, about 5 minutes. Cover, if desired, to shorten cooking time.
Once bright green and tender, turn off the heat, add Parmesan cheese and mix well. Serve immediately.



Smart Nutrition for Improved Energy, Performance and Safety

Cheesy Lentils with Roasted Asparagus

Cheesy Lentils

Serves 15

Ingredients:

- 2-1/4 cups low-sodium vegetable or chicken broth
- 1-3/4 cups dry green lentils, rinsed
- 1 cup yellow onion, finely diced
- 1-1/2 cups carrots, thinly sliced
- 2 tablespoons garlic, minced
- 1 teaspoon salt
- 1/4 teaspoon ground black pepper
- 1/2 teaspoon dried thyme
- 1 - 14.5 ounce can diced tomatoes, drained
- 1/2 cup green pepper, finely diced
- 3/4 teaspoon dried leaf parsley
- 2-1/2 cups (10 ounces) shredded low-sodium cheddar cheese



Directions:

- Pre-heat oven to 350°F.
- Combine all ingredients except cheese in a 13x9x2-inch baking dish.
- Cover with foil and bake for 60 minutes or until lentils are tender.
- Stir, then sprinkle cheese on top.
- Bake, uncovered, for 5-10 minutes or until cheese is melted.
- Serve.

The lentils can be prepared in advance. Just wait to add the cheese until you warm them for serving.

Roasted Asparagus

Serves 8

Ingredients:

- 2-1/2 pounds asparagus, cleaned, woody ends removed
- 2 tablespoons olive oil
- 1/8 teaspoon salt
- 1/8 teaspoon ground black pepper

Directions:

- Preheat oven to 350°F.
- Toss asparagus with olive oil, salt and pepper.
- Cook asparagus on foil- or parchment-lined sheet pan until bright green and tender, with a slight crunch, approximately 5-10 minutes.
- Serve.



Smart Nutrition for Improved Energy, Performance and Safety

Chicken Stir-Fry with Savory Brown Rice

Serves 8

Ingredients:

1 tablespoon olive or vegetable oil
2 cups sweet onions, sliced
3 pounds boneless chicken breast, cut into bite-sized pieces
1 cup low-sodium teriyaki marinade
4 tablespoons minced garlic, jarred is fine
3 tablespoons minced ginger, jarred is fine
4 cups broccoli, chopped
4 cups red or green cabbage, thinly sliced
2 cups bell peppers, chunked

Directions:

Heat 1 tablespoon oil in large skillet or flat-top on medium-high heat.
Add onions and chicken and cook 2 minutes, stirring often. Add teriyaki marinade, garlic and ginger, continuing to stir frequently.
Add broccoli, cabbage and bell peppers and continue to cook until broccoli and cabbage are tender, about 5-7 minutes. Cover to shorten cooking time.
Once chicken is cooked through, remove from heat.
Serve on top of brown rice.



Savory Brown Rice

Serves 8

Ingredients:

2 cups brown rice, either medium or long grain
4 cups low-sodium vegetable or chicken broth, or water
1/2 teaspoon salt

Directions:

Place brown rice and broth (or water) in medium saucepan and bring to boil.
Once boiling, reduce heat to a simmer and cover.
Simmer until all the water has been absorbed, rice is tender, and there are "eyes" - small holes covering the surface, about 20 to 30 minutes.
Remove from heat, cover and let stand for 5-10 minutes before serving.



Smart Nutrition for Improved Energy, Performance and Safety

Chicken Tostadas with Roasted Brussels Sprouts

Serves 8

Ingredients:

3 pounds boneless, skinless chicken breasts
1 cup salsa, pre-made or home-made
8 large whole wheat tortillas
2 cups sharp cheddar cheese, shredded
2 cups romaine lettuce, shredded
2 avocados, skins removed, pitted and sliced

Directions:

Pre-heat oven to 350°F.

Cook (grill or roast) chicken to internal temperature of 160°. Slice or dice and set aside to cool.

Mix cooled, cooked chicken with salsa and cheese and set aside.

Lay out tortillas on sheet pan.

Assemble by equally dividing chicken mixture onto tortillas and spread; leave flat.

Cook in oven for about 5-8 minutes, or until cheese is melted and very lightly browned and chicken is hot.

Remove from oven, and add lettuce and avocado.

Fold in half and serve.



Roasted Brussels Sprouts

Serves 8

Ingredients:

2-1/2 pounds Brussels sprouts
4 tablespoons olive oil
1/2 teaspoon salt

Directions:

Pre-heat oven to 350°F.

Wash and dry Brussels sprouts. They will probably have woody, fibrous ends; trim these off along with any old-looking leaves. If they are large, cut them in half length-wise.

Toss Brussels sprouts with olive oil and salt in mixing bowl.

Line a sheet pan with parchment paper or foil and lay Brussels sprouts on it.

Roast in oven until Brussels sprouts are tender and outer leaves are browned and crisp, about 30 minutes.

Remove from oven and serve.



Smart Nutrition for Improved Energy, Performance and Safety

Chicken Vegetable Soup with Sautéed Broccoli and Carrots

Serves 8-9

Ingredients:

3 tablespoons olive oil
2-1/4 cups onion, peeled and diced
3 pounds boneless, skinless chicken breast, cut into 1/2 inch cubes
2-1/4 cups carrots, peeled and sliced
1-1/2 cups celery, washed and chopped
1-1/2 cups mushrooms, washed, dried and chopped
1-1/2 tablespoons dried parsley
3 quarts reduced sodium chicken or vegetable broth
2 cups spinach, chopped
2 cups cooked brown rice



Directions:

Heat olive oil in stock pot on medium heat.
Add onions and chicken and cook until onions soften, about 3 minutes.
Add carrots, celery, mushrooms and parsley. Season with salt and pepper.
Add broth and water and bring to a boil.
Reduce heat and simmer for 20 minutes. The longer the soup cooks, the more flavor it will develop.
Before serving, add spinach and rice and cook until rice is heated.
Season as desired.

Sautéed Broccoli and Carrots

Serves 8

Ingredients:

2 tablespoons olive oil
2 pounds broccoli florets
1 pound carrots, peeled and sliced
1/2 teaspoon dried leaf thyme
3 tablespoons garlic, minced
1/8 teaspoon salt
1/8 teaspoon ground black pepper

Directions:

Heat oil in large skillet on medium heat.
Add broccoli, carrots and thyme and cook until broccoli turns bright green.
Add garlic and continue cooking until broccoli and carrots are tender, about 3-5 minutes. Cover to shorten cooking time.
Season with salt and pepper, remove from the heat and serve.



Smart Nutrition for Improved Energy, Performance and Safety

Curried Green Lentil Soup with Garden Salad

Serves 6+

Ingredients:

1 cup onions, chopped small
1 cup potatoes, chopped small
1 bay leaf
2 cups raw green lentils, rinsed
1 teaspoon olive oil
1 teaspoon cumin
2 teaspoons curry powder
1/8 teaspoon paprika
3 tablespoons garlic, minced
4 cups vegetable or chicken stock or broth
2 cups water, or more if desired

Directions:

Heat oil in stock pot on medium high heat.
Add onions and potatoes, bay leaf, cumin, curry powder and paprika.
Cook until fragrant and onions are softened, about 3-5 minutes.
Add lentils and stir; add garlic, broth and water.
Bring to a boil, then reduce heat to a simmer.
Simmer soup until potatoes and lentils are tender, 25 to 40 minutes.
Remove bay leaf and thin soup with water, as desired.
Optional – puree half of the soup and add back to the pot for a creamier texture.



Garden Salad

Serves 8

Ingredients:

3/4 pound (12 ounces) romaine lettuce (about 1 large head), washed, dried and chopped
2 cups cucumbers, chopped
1 cup sunflower seeds
2 cups carrots, chopped
2 cups cherry tomatoes, chopped or halved
8 tablespoons low-sodium Italian vinaigrette

Directions:

Toss all ingredients together and serve.



Smart Nutrition for Improved Energy, Performance and Safety

Garden Spaghetti with Chicken

Serves 8

Ingredients:

1 pound whole wheat spaghetti noodles
5 tablespoons olive or vegetable oil, divided
3 pounds boneless, skinless chicken breasts, cut into bite-sized pieces
3 tablespoons minced garlic, either jarred or fresh
3 tablespoons Italian seasoning
1-1/2 teaspoons salt
1 teaspoon ground black pepper
1/2 teaspoon paprika
1 large red bell pepper, bite-sized pieces
2 large green bell peppers, bite-sized pieces
1 large yellow bell pepper, bite-sized pieces
2 cups onion, diced
2 cups button mushrooms, chopped



Directions:

Cook pasta according to package directions. Once cooked, drain, chill with cold water (if noodles won't be eaten immediately), toss with a teaspoon of olive or vegetable oil to keep noodles from sticking, and set aside. Toss chicken with 3 tablespoons oil, garlic, Italian herbs, salt, pepper and paprika. In a large frying, braising pan or flat top, add remaining oil and cook chicken until browned and half-cooked. Add peppers, onions and mushrooms and cook until tender. Cover to shorten cooking time and retain moisture in the vegetables. Add pasta and cook until pasta is heated again, if necessary. Serve.



Smart Nutrition for Improved Energy, Performance and Safety

Garlic Shrimp Medley with Mashed Yams

Garlic Shrimp Medley

Serves 8

Ingredients:

4 tablespoons butter
2 tablespoons olive oil
1 cup sweet onions, sliced
3 pounds fresh sliced or chopped veggies – carrots, broccoli and/or cauliflower
3 pounds (16-20 ct/medium-sized) shrimp, thawed, shelled and deveined, with tails off
3 tablespoons garlic, minced
1/4 cup fresh parsley, minced
2 tablespoons lemon juice, or to taste



Directions:

Heat butter and olive oil in large heavy skillet on medium-high heat.

Add onions and fresh-cut veggies, cover and cook until vegetables start to get tender, about 5 minutes. Stir often. Increase heat to high. Pat shrimp with paper towels to dry them and add the shrimp, garlic and parsley to the skillet, stirring constantly.

Cook until shrimp turns pink on both sides, about 3 minutes. Add lemon juice and season with salt and pepper. Portion shrimp and vegetables and serve.

Mashed Yams

Serves 8

Ingredients:

4 large yams, peeled and cut in chunks
1/2 cup half and half
2 tablespoons butter
Salt and pepper, to taste

Directions:

Boil or steam yams until fork tender, about 15 minutes. (If roasting, roast at 350° for about 45 minutes.)

Thoroughly drain yams; mash and mix with butter, half and half, salt and pepper to taste.

Serve.



Smart Nutrition for Improved Energy, Performance and Safety

Grilled Chicken Salad with Savory Brown Rice

Serves 8

Ingredients:

3 pounds boneless, skinless chicken breasts, portioned
Salt and pepper, to taste
1/4 teaspoon paprika, to sprinkle chicken for color
8 cups fresh spinach leaves
8 cups romaine, chopped
6 tablespoons balsamic dressing
1 cup pistachios, chopped
2 avocados, pits removed, flesh cubed
1 cup mozzarella cheese, grated or shredded
2 cups apple, cored and chopped



Directions:

Season chicken with salt, pepper and paprika.

Grill chicken on medium-high heat until golden in color, firm to the touch and thoroughly cooked, about 3-4 minutes per side. Set aside to cool.

Toss greens and dressing together in a large bowl.

Portion salad greens and add pistachios, avocado, mozzarella cheese and apples.

Slice cooked chicken breasts on the bias and place on top of salad.

Savory Brown Rice

Serves 8

Ingredients:

2 tablespoons olive oil
1/2 cup carrots, peeled and chopped small
1/2 cup yellow onion, finely chopped
1 teaspoon Italian seasoning blend
3/4 teaspoon salt
2 cups brown rice, either medium- or long-grain is fine
4 cups low-sodium vegetable or chicken broth

Directions:

In medium sauce pan, heat oil on medium heat and sauté carrots and onions with Italian seasoning and salt for about 2 minutes.

Add brown rice and broth and bring to a boil.

Reduce heat, cover and simmer until all the water has been absorbed, rice is tender, and there are "eyes" — small holes covering the surface—about 20 to 30 minutes.

Remove from heat, cover and let stand for 5-10 minutes before serving.



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Hearty Oven Beef Stew with Roasted Cauliflower Slices

Hearty Oven Beef Stew

Serves 10

Ingredients:

3 pounds beef stew meat, cut into bite-sized pieces
1/2 cup + 1 tablespoon flour
1-1/2 teaspoons salt
1 teaspoon ground black pepper
1 teaspoon paprika
2 tablespoons vegetable oil
1 cup yellow or white onions, chopped
2 cups carrots, peeled and cut in chunks
2 cups potatoes, peeled and cut in chunks
1 tablespoon Italian seasoning
2 cups chicken broth
1 cup water
1 - 14.5 ounce can diced tomatoes



Directions:

Pre-heat oven to 350°F.

In a large bowl, combine flour, salt, pepper and paprika.

Add stew meat to flour mixture and toss to coat all pieces.

Heat large frying pan with oil on medium heat and brown meat about 2 minutes.

Add more oil if needed for browning.

Transfer browned meat to baking dish. Add onions, carrots, potatoes, Italian seasoning, broth, water and tomatoes. Stir.

Sprinkle remaining flour mixture from coating meat over everything and mix thoroughly.

Cover and cook for 1 hour and 45 minutes or until meat is tender, stirring once or twice.

Roasted Cauliflower Slices

Serves 8

Ingredients:

2 heads (about 3 pounds) cauliflower, sliced
2 tablespoons olive oil
Salt and pepper, to taste

Directions:

30 minutes before serving stew, thoroughly wash, slice and spread cauliflower in a single layer on a sheet pan.

Drizzle with olive oil, and season with salt and pepper.

Place cauliflower on the top oven rack (rack above the beef stew) and cook until golden and tender about 30 minutes.



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Homemade Chicken Burgers with Roasted Broccoli and Mushrooms

Serves 8

Ingredients:

3 tablespoons garlic, minced, either jarred or fresh
3 tablespoons dried leaf parsley
2 teaspoons salt
1/2 teaspoon ground black pepper
2 cups brown rice, cooked
2 eggs
2-1/2 pounds ground chicken breast
8 slices provolone cheese, thinly sliced - optional
lettuce/greens for burger topping
sliced tomatoes for burger topping
8 whole grain buns, toasted if desired



Directions:

Preheat oven to 350°F.

Mix garlic, parsley, salt, pepper, rice and egg together; then add ground chicken and mix thoroughly. This can be prepared a day or two in advance.

Form 8 patties and place patties on foil- or parchment paper-lined sheet pan. (These can be frozen for later use.)

Cook patties until lightly golden and firm to the touch, about 10-20 minutes.

Add cheese to patties and melt, if desired.

Place patties on buns with lettuce and tomato. Serve.

Roasted Broccoli and Mushrooms

Serves 8

Ingredients:

3 pounds broccoli, cut into florets
1 pint white/button mushrooms, halved
4 tablespoons olive oil
1/4 teaspoon salt
1/8 teaspoon ground black pepper

Directions:

Pre-heat oven to 350°F.

Toss broccoli and mushrooms with olive oil, salt and pepper.

Spread vegetables on foil- or parchment-lined sheet pan.

Cook until broccoli is tender and lightly golden, but not mushy, about 20 to 30 minutes.

Serve.



Smart Nutrition for Improved Energy, Performance and Safety

Honey Mustard Chicken, Brown Rice, Sautéed Broccoli and Tomatoes

Serves 8

Ingredients:

3 pounds boneless, skinless chicken breasts

1-1/2 cup crushed pretzels

1/8 teaspoon paprika

Cooking spray or olive oil

For Honey Mustard Sauce:

1/4 cup + 2 tablespoons plain Greek yogurt

3 tablespoons Dijon mustard

1-1/2 tablespoons honey

1 tablespoon fresh lemon juice

Directions:

Preheat oven to 350°F.

Portion chicken breasts. If needed, lightly pound them to a uniform thickness so they cook evenly.

Press chicken into pretzel crumbs and spray with cooking spray.

Bake chicken on foil- or parchment-lined sheet pan until firm, about 20 to 30 minutes, or until internal chicken temperature reaches 160 degrees.

Mix yogurt, mustard, honey and lemon juice. Serve with chicken.



Brown Rice

Serves 8

Ingredients:

1/2 teaspoon salt

2 cups brown rice, medium or long grain is fine

4 cups water, or low-sodium vegetable or chicken broth

Directions:

Add brown rice and broth to medium sauce pan and bring to boil.

Once boiling, reduce heat to a simmer and cover.

Simmer until all the water has been absorbed, rice is tender and there are "eyes" - small holes covering the surface - about 20 to 30 minutes.

Remove from heat, cover and let stand for 5-10 minutes and serve.

Sautéed Broccoli and Tomatoes

Serves 8

Ingredients:

2-1/2 pounds broccoli, florets

2 cups cherry tomatoes, quartered

2 tablespoons unsalted butter

Salt and pepper to taste

Directions:

Heat large skillet on medium to melt butter.

Add broccoli and cook until broccoli turns bright green and almost tender, 3-4 minutes.

Cover to shorten cooking time. Then add tomatoes and cook until tomatoes are softened, about a minute.

Season with salt and pepper. Remove from heat and serve.



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House-Made Beef Pot Roast with Avocado-Romaine Salad

House-Made Beef Pot Roast

Serves 8

Ingredients:

3 pounds beef chuck roast
1/2 teaspoon salt
1/2 teaspoon ground black pepper
3 cups red potatoes, quartered
3 cups onions, chopped
1/4 cup garlic, minced
1 - 14.5 ounce can diced tomatoes
3 cups carrots, peeled and chopped
1 cup mushrooms, chopped
3 tablespoons Italian seasoning
2 cups low-sodium chicken broth
2-3 tablespoons fresh lemon juice, or as needed



Directions:

Season chuck roast with salt and pepper and brown in heavy skillet with oil.
Place browned meat, potatoes, carrots, peppers, mushrooms, onions, garlic, tomatoes, Italian seasoning and chicken broth in crock pot.
Cook on low until beef is fork tender, about 7 hours.
Turn off heat and season with lemon juice to taste.

Avocado-Romaine Salad

Serves 8

Ingredients:

3/4 pound (12 ounces) romaine lettuce, or 1 large head
2 avocados, stones removed, flesh scooped and chunked
2 cups apples, cored and chopped
8 tablespoons low-sodium balsamic vinaigrette

Directions:

Toss all ingredients together and serve.



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Italian Chicken Pasta with Chopped Salad

Serves 8

Ingredients:

1 pound whole grain, spiral-shaped pasta
3 pounds boneless, skinless chicken breasts
2 cups yellow onions, chopped small
2 tablespoons garlic, minced
2 tablespoons olive oil
2 pounds zucchini, chopped medium
2 pounds carrots, chopped small
1-1/2 (24 ounce) jars low-sodium prepared red pasta sauce
4 tablespoons Italian herbs
1/2 teaspoon ground black pepper
1-1/2 cups Parmesan cheese, grated, divided—1 cup to mix in, 1/2 cup for garnish



Directions:

Pre-heat oven to 350°F.

Cook pasta per package directions, add a small amount of oil to prevent sticking and set aside. This can be done in advance.

Cook chicken as desired: grill, bake or broil 3-4 minutes per side or to desired doneness, . Season with salt and pepper, dice or chop and set aside. This can be done in advance.

Combine all ingredients, including 1 cup portion of Parmesan cheese and place in a large greased casserole dish. Cover and bake until carrots are tender and mixture is hot, about 30-45 minutes.

Remove from oven, garnish with remaining 1/2 cup Parmesan cheese.

Serve.

Chopped Salad

Serves 8

Ingredients:

3/4 pound (12 ounces) romaine lettuce (about 1 large head), washed, dried and chopped
1 cup tomatoes, chopped
1 cup cucumber, chopped
1 cup black olives, chopped or sliced
1 cup garbanzo beans, rinsed and drained
1 cup red bell pepper, seeded and chopped
1 cup herbed vinaigrette (or other desired vinaigrette):
 1/4 cup apple cider vinegar
 3 pinches each of salt and ground black pepper
 1/8 teaspoon sugar or honey, or to taste
 1 teaspoon dried leaf parsley
 1 tablespoon garlic, minced
 2 teaspoons each dried leaf oregano, thyme and basil

Combine all vinaigrette ingredients except the oil. Once adjusted to desired taste, add the oil to the mixture. Assemble salad ingredients and dress salad just before serving.



Smart Nutrition for Improved Energy, Performance and Safety

Marinated Steak with Mashed Sweet Cauliflower and Tomato-Cucumber Salad

Serves 8

Mashed Sweet Cauliflower

Ingredients:

2 heads cauliflower (about 3 pounds)

3 cups sweet potatoes

4 tablespoons unsalted butter

Salt and pepper, to taste

Directions:

Mashed sweet cauliflower can be made ahead and will hold until dinnertime.

Thoroughly wash both vegetables.

Peel and cut potatoes in chunks and boil in water until soft, about 15 minutes. Coarsely chop and steam cauliflower until soft tender, about 7-9 minutes.

If you have a steamer pan that will fit on top of the potato pot, you can steam the cauliflower over the boiling potatoes.

Once both are soft, remove from water and drain. Combine the two and mash together well.

Add butter and season as desired. Mix well and set aside until steaks are done.



Marinated Steak

Ingredients:

3 pounds (8 – 6 ounce portions) steak of your choice

1/4 cup olive oil

1/4 cup garlic, minced

1 tablespoon dried rosemary, crumbled

Salt and pepper to taste, two good pinches per steak

Directions:

Combine olive oil, garlic and rosemary to make a paste. Cover the steaks with it and let sit until ready to cook (anywhere from 15 minutes to a couple of hours is fine).

Allow steaks to sit at room temperature for 15 minutes before cooking to help ensure even cooking throughout.

Either broil, pan fry or grill. For medium rare steak, cook 4-5 minutes per side. Remove from heat, and let rest for 5-10 minutes before serving.

Tomato-Cucumber Salad

Serves 8

Ingredients:

3 tablespoons balsamic vinegar

3 tablespoons olive oil

2 tablespoons Dijon mustard

2 tablespoons water

1/8 teaspoon ground black pepper

4 cups tomatoes, in chunks

4 cups cucumbers, peeled and chopped

Directions:

In small bowl, mix balsamic vinegar, oil, mustard, water and black pepper. In large bowl, toss tomatoes and cucumbers with dressing and serve.



Smart Nutrition for Improved Energy, Performance and Safety

Pineapple Pork Kebobs with Roasted Chili Carrots

Serves 8

Ingredients for Kebobs:

Rosemary garlic marinade, divided
1/2 cup olive oil
2 tablespoons fresh rosemary, minced
4 cloves garlic, minced
3 pounds pork tenderloin, cut in 1 inch chunks
2 cups pineapple, fresh or canned, cut in 1 inch chunks
1 cup sweet onion, cut in 1 inch chunks
2 cups green peppers, cut in 1 inch chunks
8 large skewers, soaked if wood



Directions:

Pre-heat broiler or grill.

If using bamboo skewers, soak as long as possible before assembling kebobs.

Mix olive oil, rosemary and garlic in small mixing bowl to make marinade; set aside.

Thread meat, pineapple, onions, peppers on skewer and repeat.

Brush skewers with marinade, season with salt and pepper and let sit for at least 20 minutes, or as long as possible.

Place skewers under pre-heated broiler on top rack and cook until meat is firm and lightly browned, about 10-15 minutes, turning as needed to ensure even cooking.

Cook to desired doneness, then remove from heat and serve.

Roasted Chili Carrots

Serves 8

Ingredients:

3 pounds carrots, peeled, and chopped in chunks (baby carrots can be used)
1 teaspoon chili powder
1 cup onions, chopped in small pieces
1 tablespoon lime juice
1/2 teaspoon salt
2 tablespoons olive oil

Directions:

Preheat oven to 350°F.

Mix all ingredients together.

Roast carrots on foil- or parchment-lined baking sheet for 20 to 30 minutes, until lightly golden and tender, not mushy.



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Pork Provençal with Acorn Squash and Harvest Salad

Serves 8

Ingredients:

1/2 cup honey

1 teaspoon each dried leaf rosemary and thyme

1/4 cup garlic, minced

2 tablespoons Dijon mustard

1/2 cup red onion, diced

Juice of 1 lemon (about 1-1/2 tablespoons)

1 teaspoon salt

2 tablespoons olive oil, for pan searing

3 pounds boneless pork loin, in 8 portions

Directions:

Preheat oven to 450°F with rack in middle position. At the same time, place roasting pan or something comparable in oven to pre-heat.

Mix together all ingredients except pork and oil in a small sauce pan and bring to a simmer. Remove from heat and set aside.

In large mixing bowl, mix pork cuts with sauce and marinate for 1-2 hours, if possible.

Heat large skillet on medium-high heat with 1 tablespoon oil until oil is shimmering.

Brown pork servings about 2-3 minutes on each side.

Once browned, remove pork from pan, place in pre-heated roasting pan in oven. and cook 8-10 minutes until internal temperature reaches 145 degrees. Gently simmer remaining marinade for about 5 minutes add a little water if needed to keep loose, not to thick.

Once pork is finished and removed from oven, drizzle sauce over pork. Serve.



Roasted Acorn Squash

Serves 8

Ingredients:

3 large acorn squash, halved, with seeds removed

3 tablespoons each of butter and brown sugar

1/4 teaspoon salt

Directions:

Pre-heat oven to 350°F .

Cut acorn squash in half. Remove seeds.

Portion butter, brown sugar and salt on top of each piece of acorn squash.

Cover top of each squash piece with foil (or with parchment paper and foil) to keep moisture in.

Place squash in small baking dish, add water about half-way up the sides of the squash and put in oven.

Cook for 45-65 minutes, or until squash is tender.

After 45 minutes, begin checking for doneness every 5-10 minutes.

Harvest Salad

Serves 8

Ingredients:

1/2 cup olive oil

1/4 cup balsamic vinegar

2 tablespoons honey

8 cups fresh spinach leaves

4 cups tomatoes, chopped

2 cups canned chickpeas (garbanzo beans), rinsed and drained

4 cups carrots, peeled and sliced

2 avocados, pits removed and flesh cubed

Directions:

Mix oil, balsamic vinegar and honey in a small bowl.

In a large mixing bowl, combine remaining ingredients.

Drizzle dressing on top of salad before serving.



Smart Nutrition for Improved Energy, Performance and Safety

Roasted Pork Chops with Tomato-Feta Sauce, Spiral Pasta and Carrot-Cucumber Salad

Serves 8

Ingredients:

1 pound spiral-shaped whole-grain pasta
3 pounds boneless pork chops, portioned
1/4 teaspoon each salt and black pepper
1 teaspoon + 3 tablespoons olive oil, divided
2 cups yellow onion, chopped
4 tablespoons garlic, minced
1/2 teaspoon ground allspice
2 - 28-ounce cans diced tomatoes in juice
1 teaspoon each salt and cinnamon
1/4 teaspoon sugar, or to taste
1 cup feta cheese, crumbled



Directions:

Place rack in middle of oven and preheat oven to 450°F.

At the same time, place roasting pan or something comparable in oven to preheat.

Season pork chops with salt and pepper.

Heat large skillet on medium-high heat with 1 tablespoon oil, until oil is shimmering.

Brown pork chops 2-3 minutes on each side. Once browned, remove chops from pan and place in pre-heated roasting pan in oven.

Cook 10-15 minutes or until internal temperature reaches about 140° or desired doneness.

While chops are cooking, make the sauce.

Using the same skillet used for browning the chops (which has the tasty browned bits in it), turn heat down to medium, add remaining oil, and cook onion, garlic and salt until softened, about 5 minutes.

Stir in cinnamon and allspice; add the chopped tomatoes (with juice) and sugar.

Simmer, uncovered, stirring occasionally until slightly thickened, about 20 minutes. Remove from heat.

While sauce is simmering, cook pasta according to package directions. Once cooked, drain and toss with a teaspoon of olive oil and set aside.

Once pork chops are cooked, remove from oven and let rest for 5 minutes. Top with tomato sauce and feta cheese and serve.

Carrot-Cucumber Salad

Serves 8

Ingredients:

3/4 pound or 1 large head romaine lettuce
2 cups each cucumbers and carrots, peeled and chopped
8 tablespoons low-sodium Italian vinaigrette

Directions:

Toss all ingredients together and serve.



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Rosemary Pork Tenderloin with Roasted Veggies

Serves 8

Ingredients:

3 pounds pork tenderloin
1 tablespoon olive oil
1 teaspoon dried rosemary, crushed
1/2 teaspoon ground black pepper
1/4 teaspoon salt
1-1/2 pounds broccoli, roughly chopped
(pre-cut bagged blend works fine)
1-1/2 pounds cauliflower, roughly chopped
2 cups medium onion, peeled and chopped
2 cups mushrooms, washed/dried, chopped
4 tablespoons olive oil
1 tablespoons fresh lemon juice
1/4 teaspoon salt
1/8 teaspoon ground black pepper



Directions:

Pre-heat oven to 425°F.

Combine olive oil, dried rosemary, pepper and salt in a bowl. Mix well and rub all over pork tenderloin. Place tenderloin on foil- or parchment-lined sheet pan.

Separately toss broccoli, cauliflower, onions and mushrooms with olive oil, salt, pepper and lemon juice.

Line a second sheet pan with foil or parchment paper and arrange vegetables in single layer. Set aside.

Roast pork until internal temperature reaches 140-145°, about 20 minutes.

When pork is half-cooked, about 15 minutes, place vegetables in oven and roast until broccoli and cauliflower are tender and lightly golden, but not mushy, about 15 to 25 minutes.

Once tenderloin is cooked, remove from oven, place on cutting board and let sit for at least 5 minutes.

Slice pork into 1/2 inch thick slices, and serve with vegetables.



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Slow Cooker Veggie Lasagna and Honey-Roasted Carrots and Apples

Serves 8

Ingredients:

2 tablespoons olive oil
2 cups mushrooms, chopped
1 cup green bell pepper, seeded and chopped
2 cups yellow onion, finely chopped
6 cups spinach, loosely packed, chopped
1 pound 2% cottage cheese
4 tablespoons minced garlic, jarred or fresh
2 tablespoons Italian seasoning
2 cups shredded mozzarella cheese, divided (1-1/2 cups and 1/2 cup)
1/4 teaspoon salt
26 ounce jar low-sodium spaghetti sauce
2 large zucchini, sliced in 1/4-inch thick rounds
6 ounces no-boil whole wheat lasagna noodles



Directions:

Heat oil in large skillet over medium heat and add mushrooms, peppers, onions and spinach. Cook until water evaporates, about 5-7 minutes. Season with salt and pepper. In mixing bowl, mix cottage cheese, garlic, Italian seasoning, 2 cups mozzarella cheese and salt. Grease slow cooker. Cover bottom with one third of sauce and continue to assemble as follows: single layer of noodles, one third of the cooked vegetables, a layer of raw zucchini and half of the cottage cheese mixture. Repeat layering once in same order. Add layer of remaining sauce, cooked vegetables and zucchini. Sprinkle remaining 1/2 cup mozzarella cheese on top. Cook on low for 5 hours, or until noodles and zucchini are tender.

Honey-Roasted Carrots and Apples

Serves 6

Ingredients:

1-1/2 pounds Granny Smith apples, cored and cut in medium pieces
1 pound carrots, peeled and chopped small
1/4 teaspoon ground cinnamon
2 tablespoons honey
2 tablespoons unsalted butter, melted

Directions:

Preheat oven to 350° F.
Mix all ingredients together and spread in a single layer on foil- or parchment-lined sheet pan. Roast until lightly golden and tender, but not mushy, about 20 to 30 minutes.



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Salmon Puttanesca with Savory Quinoa and Balsamic Apple-Walnut Salad

Serves 8

Ingredients:

1/4 cup olive oil
3 pounds salmon (or other firm fish) fillets
3 slices bacon, cooked and diced small
1-1/2 cups onion, sliced
1/4 cup minced garlic, jarred is fine
1 teaspoon flaked red pepper
1 tablespoon crumbled dried leaf basil
1 - 28-ounce can diced tomatoes
1/3 cup pitted mixed olives, chopped
2 tablespoons capers, rinsed and drained

Directions:

Heat a large sauté pan over medium heat and add the olive oil.

Add bacon and cook until lightly crisp and browned, about 5-7 minutes.

Add onion and garlic and cook until lightly browned, about 5 minutes. Be careful not to burn the garlic or it will taste bitter. Add basil and red pepper flakes and stir. Then add diced tomatoes and bring to a boil. Lower heat to a simmer and add capers and olives. Cook until slightly reduced in quantity, about 10 minutes. Season salmon with olive oil, salt and pepper. Cook salmon until firm to the touch either by grilling on medium/high heat or baking at 375 degrees until desired doneness, 5-10 minutes depending on thickness. Portion sauce over cooked salmon.



Savory Quinoa

Serves 8

Ingredients:

2 tablespoons olive oil
1/2 cup yellow onion, finely diced
1 teaspoon Italian seasoning
2 cups quinoa
4 cups low-sodium vegetable or chicken broth

Directions:

Add oil, onions and Italian seasoning to a medium sauce pan on medium heat. Sauté about 2 minutes.

Add quinoa and broth and bring to a boil. Once boiling, reduce heat to a simmer and cover. Simmer until all the water has been absorbed, quinoa is tender and there are "eyes"—small holes covering the surface, about 20 to 30 minutes. Remove from heat, cover and let stand for 5-10 minutes before serving.

Balsamic Apple-Walnut Salad

Serves 8

Ingredients:

8 portions fresh greens, washed and dried
2 cups whole walnuts AND 2 cups apples, cored and chopped
8 tablespoons low-sodium balsamic vinaigrette

Directions: Toss together all ingredients and serve.



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Salmon with Tomato Relish, Roasted Garlic Potatoes and Lemon Green Beans

Serves 8

Ingredients for Relish:

4 large tomatoes, washed and diced
2 large avocados, pits and skin removed, diced
1/2 cup onion, diced
4 tablespoons fresh cilantro, chopped
2-4 tablespoons fresh lime juice, or to taste
Salt and pepper to taste

Ingredients for Salmon:

8 -6 ounces salmon fillets
2 tablespoons olive oil
Salt and pepper to season fillets

Ingredients for Garlic Potatoes:

4 cups red potatoes, quartered
8 cloves garlic, chopped
4 tablespoons olive oil
Salt and pepper to taste

Ingredients for Lemon Green Beans:

2 pounds green beans, frozen
1/4 cup olive oil
1-1/2 tablespoons fresh lemon juice (about 1 lemon)
1/8 teaspoon salt
Black pepper, to taste

Directions:

Preheat oven to 350°F.

In mixing bowl, combine tomatoes, avocado, onions, cilantro, lime juice, salt and pepper. Mix well and set aside.

Season salmon fillets with olive oil, salt and pepper. Set aside.

Toss potatoes with garlic, olive oil, salt and pepper. Spread in single layer on sheet pan and roast until golden and tender about 20-30 minutes.

When potatoes are about half-cooked, place salmon on the top oven rack and cook until lightly golden and firm to the touch, about 10-20 minutes. Ideally, potatoes and fish will be finished at the same time.

While fish is cooking, heat a large skillet with olive oil on medium heat. Add green beans to skillet.

After about 3 minutes of cooking, add garlic powder, lemon juice, salt and pepper and mix well.

Cook until heated through and tender, about 5 minutes total.

Remove from heat and serve all meal components.





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Stuffed Turkey Breast with Green Beans and Warmed Whole-Grain Rolls

Serves 8

3 pounds boneless, skinless whole turkey breast (about 2 turkey breasts)
3/4 cup onion, chopped
4 cups fresh spinach, chopped
1 cup mushrooms, sliced
2 tablespoons fresh thyme, chopped
2 tablespoons fresh parsley, chopped
1/2 cup cashews, chopped in large pieces
1/2 cup celery, sliced
2 tablespoons olive oil
Salt and pepper, to taste
8 whole grain rolls, warmed



Directions:

Preheat oven to 350°F.

Heat large skillet on medium-high heat.

Add oil and cook onions, spinach, mushrooms, thyme, parsley, celery and cashews until celery is tender and water has evaporated, about 4 minutes.

Remove from heat and set aside.

Insert knife into side of turkey breast and create a pocket in the middle of the breast.

Stuff breast with sautéed mixture.

Wipe out the skillet, add a tablespoon or more of oil as needed and sear turkey breast(s) until golden brown.

Cover turkey, transfer to oven and cook until it reaches an internal temperature of 150-155°, about 30-35 minutes. (If using a convection oven, cooking time may be shortened by 20 percent).

Once cooked, let it rest for 10 minutes. The internal temperature will rise an additional 5-7 degrees while resting.

Green Beans

Serves 8

Ingredients:

4 tablespoons butter
2-1/2 pounds fresh green beans (frozen are fine, will need less cooking time)
2 tablespoons garlic, minced
4 chopped green onions, both green and white parts
1/4 teaspoon salt
1/8 teaspoon ground black pepper

Directions:

Heat large skillet on medium heat with butter.

Add green beans and garlic and cook until green beans are heated through and bright green, about 3-5 minutes.

Cover to shorten cooking time.

Add green onions and season with salt and pepper.

Remove from heat and serve.



Smart Nutrition for Improved Energy, Performance and Safety

Teriyaki Flank Steak with Stir-Fried Vegetables and Soba Noodles

Serves 8

Ingredients:

3 pounds flank steak, cleaned and trimmed,
as needed
3 tablespoons garlic, cut into slivers
1 cup teriyaki marinade

Directions:

Gently insert knife tip into steak numerous times; insert garlic slivers into knife holes. Marinate meat in shallow baking dish with teriyaki marinade for 10 minutes. Cook meat on preheated medium-high heat grill for 3-5 minutes each side, or until desired doneness.



Stir-Fried Vegetables

Serves 8

Ingredients:

4 tablespoons olive oil
3 cups sweet onion, chopped
2 cups red bell pepper, seeded and sliced
1 cup green pepper, seeded and sliced
8 cups broccoli florets, cut in bite-sized pieces
1-1/2 cups tomatoes, chunked
2-3 tablespoons teriyaki marinade

Directions:

Heat oil in large skillet or flat top or braising pan on medium-high heat. Add broccoli, onions, and peppers and cook until broccoli softens, about 3-5 minutes. Cover to shorten cooking time. Add tomatoes and teriyaki sauce and cook until broccoli is tender. Remove from heat.

Soba (Buckwheat) Noodles

Serves 8

Ingredients:

1 pound soba (buckwheat) noodles
1 gallon water
Small amount of olive oil

Directions:

Bring one gallon of water to a boil. Cover pot to shorten time required. Once boiling, add noodles, lower heat to a soft boil and stir. Boil gently for 6 to 8 minutes until just cooked through. Remove from heat, drain, and toss with a small amount of olive oil to keep noodles from sticking. Hold noodles until serving time. Toss noodles with stir-fry vegetables just before serving.



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Tilapia Fish Tacos with Jicama Salad

Serves 8

Ingredients:

- 4 cups tomatoes, diced
- 1 cup onion, diced
- 1 jalapeño pepper, minced, or to taste. The seeds are hot so removing them will lessen the heat.
- 1/2 cup loosely packed cilantro, roughly-chopped
- 2- 3 tablespoons lime juice
- 2 tablespoons olive oil
- Salt, to taste
- 4 tablespoons olive oil, for drizzling on fish fillets
- 3 pounds tilapia fillets, thawed if frozen, or other fish of choice
- 8 pinches salt
- 8 pinches ground black pepper
- 8 large whole-grain tortillas, warmed
- 2 cups romaine lettuce, shredded or thinly-sliced
- 2 large avocados, diced



Directions:

Pre-heat oven to 350°F.

For the salsa, in large bowl mix tomatoes, onions, jalapeños, cilantro, lime juice and olive oil. Add salt to taste. Set aside; serve at room temperature.

Line baking pan with parchment paper or foil.

Place fish on baking pan, drizzle with olive oil and sprinkle with salt and pepper.

Bake fish until it is firm and flakes easily, about 7-10 minutes. General rule: 10 minutes per 1 inch thickness.

Once cooked, remove from oven.

Portion fish on tortillas.

Add shredded lettuce, then salsa, then avocado and additional cilantro, if desired.

Jicama Salad

Serves 8

Ingredients:

- 3 pounds jicama, peeled, julienne-cut or grated using cheese grater or food processor
- 1 cup green bell pepper, diced
- 1/2 cup red onion, diced
- 1 cup fresh orange, peeled and white pith removed, chopped medium
- 1/4 cup chopped fresh cilantro or flat-leaf parsley, optional
- 1/4 cup lime juice, or to taste
- 2 pinches paprika
- 1/8 - 1/4 teaspoon salt, or to taste

Directions:

Mix jicama, bell peppers, onion, orange and cilantro or parsley in a large bowl. Mix paprika and salt with lime juice, drizzle over vegetable/fruit mixture and stir. For best flavor, let sit 10 minutes or longer before serving.



Smart Nutrition for Improved Energy, Performance and Safety

Turkey Burgers with Mango-Cashew Salad

Serves 8

Ingredients:

2-1/2 pounds ground turkey
2 cups whole-grain breadcrumbs
2 eggs
1 tablespoon dried leaf basil, crumbled
2 teaspoons salt
2 cups mushrooms, washed and dried, sliced
2 cups sweet onions, sliced
4 tablespoons unsalted butter
8 - 3/4 ounce slices, deli-style mozzarella cheese
2 large tomatoes, sliced
8 whole grain burger buns, toasted if desired



Directions:

In large bowl, mix breadcrumbs, egg, basil and salt. Add ground turkey and mix well. Make patties about the size of the bun, place on a plate, cover and refrigerate until ready to cook.

Add butter, mushrooms and onions to a frying pan on medium-high heat and cook about 10 minutes, until tender and brown. Turn heat to low and keep warm.

Pan-fry or grill burgers, on medium heat, until firm—about 4 to 5 minutes per side.

Assemble burgers on buns and top with cheese, onion/mushroom mixture and tomato slices.

Mango-Cashew Salad

Serves 8

Ingredients:

1 cup cashews, toasted or roasted
2 large apples, cored and thinly sliced
1 large red bell pepper, seeded and thinly sliced
1 large yellow bell pepper, seeded and thinly sliced
1 mango, skinned and diced
Juice from one fresh lemon
2 tablespoons olive oil

Directions:

Combine apples, peppers, mango, lemon juice and olive oil.

Mix thoroughly and season with salt and pepper, as desired.

Set aside until ready to serve. Top with cashews before serving.



Smart Nutrition for Improved Energy, Performance and Safety

Turkey Meatloaf and Spinach-Walnut-Apple Salad

Turkey Meatloaf

Serves 8

Ingredients:

1 tablespoon olive oil
3 pounds ground turkey
1 cup pineapple or mango chutney
1-3/4 cups whole wheat bread crumbs
3 eggs, beaten
1/4 cup green pepper, diced
1/4 cup yellow onion, diced
2 tablespoons Italian herbs
2 teaspoons garlic powder
1 teaspoon salt
1/2 teaspoon ground black pepper



Directions:

Preheat oven to 350°F.

Grease standard loaf pan with olive oil.

In large mixing bowl, combine ground turkey, chutney, and bread crumbs; mix well.

In a separate bowl, combine green pepper, onions, eggs, Italian seasoning, garlic powder, salt and black pepper.

Thoroughly mix together turkey mixture and vegetable mixture.

Transfer mixture into loaf pan, packing loosely but evenly.

Place loaf pan in oven and bake until firm, about 60-75 minutes or until a meat thermometer inserted in center of loaf reads 165°.

Remove from oven and let sit 10 minutes before slicing.

Spinach-Walnut-Apple Salad

Serves 8

Ingredients:

3/4 pound (12 ounces) fresh spinach leaves
8 tablespoons balsamic salad dressing
1 cup walnuts, in large pieces
2 cups apple, cored and sliced

Directions:

Toss together greens, walnuts, apples and dressing in large bowl.

Serve.



Smart Nutrition for Improved Energy, Performance and Safety

White Chili with Parmesan-Roasted Cauliflower and Broccoli

Serves 8+

Ingredients:

3 tablespoons olive oil
1-1/2 cup onions, chopped small
2 - 4 ounce cans medium-hot green chili peppers
3 pounds boneless, skinless chicken breasts, in bite-sized chunks
1-1/2 teaspoons ground cumin
1-1/2 teaspoons dried leaf oregano
3 tablespoons garlic, minced
2-1/2 cups canned white beans of choice, rinsed and drained (cannellini, navy, northern, black-eyed peas, baby lima, garbanzo)
3 tablespoons lime juice
3/4 teaspoon salt
3/4 teaspoon ground black pepper
6 cups low-sodium chicken broth
Water, as needed*



Directions:

Heat a large heavy stock pot on medium-high heat. Add oil and cook onions and chicken until onions soften, about 3 minutes.

Reduce heat to medium, add green chilies, cumin, oregano and garlic and cook, stirring, for about 5 minutes.

Add beans and broth, bring to a boil and reduce to a simmer.

Simmer, stirring occasionally, for at least 30 minutes. If possible, allow chili to simmer for a couple hours.

Season with salt and pepper, as needed.

Chili will taste even more delicious the next day.

*Add water if chili is too thick.

Parmesan-Roasted Cauliflower and Broccoli

8 servings

Ingredients:

2 pounds broccoli florets
1 pound cauliflower florets
3 tablespoons olive oil
3 tablespoons minced garlic
1/2 cup grated Parmesan cheese
Pepper, to taste

Directions:

Pre-heat oven to 350°F.

Place cauliflower and broccoli on sheet pan; toss with olive oil and garlic.

Cook, stirring occasionally, until vegetables are tender, not mushy, and golden brown—about 30 minutes.

Remove from oven, add Parmesan cheese, then serve.



Smart Nutrition for Improved Energy, Performance and Safety

Post-Fire Meal Plan

As part of their overall nutrition strategy, firefighters are strongly encouraged to take responsibility for their complete meal program. One way to do this is to prepare meals ahead of time and freeze them so they are available when needed—they will just need to be reheated.

High-protein meal recipes (with photos, on the following pages) have been provided as part of this program and are easy to prepare. Firefighters can decide among themselves who will prepare them and when to do this advance cooking.

To reheat, place the frozen high-protein meal in a 350-degree oven and cook until the food is hot, about 60 to 75 minutes. Internal temperature should be 160 degrees. To reheat accompanying vegetable dishes, cook until the food is hot, 20-30 minutes. Reheating directions are included in the recipes and should be written on all high-protein recipe freezer labels.

We suggest that fire stations use disposable foil pans with lids or cover the foil pans with heavy-duty foil to store these meals in the freezer.

Date and label and always rotate frozen meals, eating the oldest first, so meals are as fresh as possible.

After returning from a structure fire or serious event, someone should immediately take a designated meal out of the freezer and put it in the oven to reheat so there is a hot high-protein meal available quickly.



Smart Nutrition for Improved Energy, Performance and Safety

HIGH PROTEIN - Hearty Beef-Vegetable Stew

Serves 10

Ingredients:

6 pounds beef stew meat, cut into bite-sized pieces
3/4 cup + 1 tablespoon flour
2-1/2 teaspoons salt
2 teaspoons ground black pepper
2 teaspoons paprika
2 tablespoons vegetable oil
1 cup yellow or white onions, chopped
2 cups carrots, peeled and cut in chunks
2 cups potatoes, peeled and cut in chunks
2 tablespoons Italian seasoning
4 cups water or reduced-sodium chicken broth
1 - 14.5oz can diced tomatoes, with juice



Directions:

Pre-heat oven to 350°F.

Combine flour, salt, pepper and paprika in a large bowl.

Add stew meat to flour mixture and toss to coat all pieces.

Heat oil in large frying pan on medium heat and brown meat, about 2 minutes.

Add more oil if needed for browning.

Transfer browned meat to baking dish and add onions, carrots, potatoes, Italian seasoning, water or broth and tomatoes. Stir.

Sprinkle remaining flour mixture from coating the meat over everything and mix thoroughly.

Cover and cook for 1 hour and 45 minutes, stirring once or twice, or until meat is tender.

Remove from heat. Cool and package for freezer.

Label with entrée name and date and freeze.

LABEL: Directions for Heating: Cook in 350° oven for 1 to 1-1/4 hours, or until food is hot.



Smart Nutrition for Improved Energy, Performance and Safety

HIGH PROTEIN - Green Chili Chicken Chili with Parmesan Cauliflower and Broccoli

Serves 8+

Ingredients:

3 tablespoon olive oil
1-1/2 cups onions, diced
4 - 4 ounce cans medium-hot green chili peppers, diced
6 pounds boneless, skinless chicken breast, cut in bite-sized chunks
4 teaspoons ground cumin
4 teaspoon dried oregano
1/3 cup minced garlic
2-1/2 cups canned white beans of choice, rinsed and drained (cannellini, navy, northern, black eyed peas, baby lima, garbanzo)
1/3 cup lime juice
1-1/2 teaspoons salt
1 teaspoon ground black pepper
6 cups low-sodium chicken broth
Water, as needed



Directions:

Heat a large, heavy stock pot on medium-high heat; add oil, onions and chicken and cook until onions soften, about 3 minutes.

Reduce heat to medium; add green chilies, cumin, oregano and garlic and cook, stirring, for about 5 minutes.

Add beans and broth and bring to a boil, then reduce to a simmer.

Simmer, stirring occasionally, for at least 30 minutes. If time permits, allow chili to simmer for several hours.

Season with salt and pepper as needed; add more water to reach desired thickness.

Remove from heat, let cool and package for freezer.

Label with meal name and date and freeze.

LABEL: Directions for Heating: Cook in 350° oven for 1 to 1-1/4 hours, or until food is hot.

Parmesan Cauliflower and Broccoli

8 servings

Ingredients:

2 pounds frozen cauliflower florets
1 pound frozen broccoli florets
3 tablespoons olive oil
3 tablespoons minced garlic
1/2 cup grated Parmesan cheese

Directions:

Mix all ingredients together.

Package for freezer.

Label with name and date and freeze.

LABEL: Directions for Heating: Cook in 350° oven for about 20-30 minutes or until vegetables are hot.



Smart Nutrition for Improved Energy, Performance and Safety

HIGH PROTEIN - Savory Beef Casserole with Garlic Green Beans

Serves 8

Ingredients:

1/2 teaspoon salt
2 cups brown rice
4 cups water, or low-sodium vegetable or chicken broth
6 tablespoons butter
3 cups yellow onion, diced
3 cups carrots, peeled and diced
2 cups green bell pepper, chopped small
2 bay leaves
6 pounds ground beef, 90% lean/10% fat
1/2 cup garlic, minced
1/2 cup tomato paste + 1 cup water, mixed
4 – 14.5 oz cans diced tomatoes
3 tablespoons dried leaf oregano
3 tablespoons dried leaf basil
2 tablespoons dried leaf thyme
Salt and pepper, to taste



Directions:

Combine brown rice and water or broth in medium sauce pan and bring to a boil.

Once boiling, reduce heat to a simmer and cover.

Simmer until all the water has been absorbed, rice is tender, and there are "eyes" — small holes covering the surface, about 20 to 30 minutes.

Remove from heat and set aside.

To make the meat sauce, heat a large skillet on medium heat.

Add butter and onions, carrots, bell pepper and bay leaves and cook until onions are soft, about 3 minutes.

Add ground beef and garlic and cook for 5 minutes, stirring frequently.

Add tomato paste and water mixture and stir. Then add oregano, basil and thyme. Add canned diced tomatoes, stir thoroughly and bring to a boil, then simmer for 20 minutes. Remove bay leaves; add more water, if needed. Season with salt and pepper to taste and remove from heat.

Combine rice with meat sauce and let cool.

Once cooled, package for freezing. Label with entrée name and date and freeze.

LABEL: Directions for Heating: Cook in 350° oven for 1 to 1-1/4 hours, or until food is hot.

Garlic Green Beans

Serves 8

Ingredients:

4 tablespoons butter, melted
2-1/2 pounds frozen green beans
2 tablespoons garlic, minced
4 chopped green onions, both green and white parts
1/4 teaspoon salt
1/8 teaspoon black pepper

Directions: Mix all ingredients together. Package for freezer. Label with name and date and freeze.

LABEL: Directions for Heating: Cook in 350° oven for about 20-30 minutes or until vegetables are hot.



Smart Nutrition for Improved Energy, Performance and Safety

HIGH PROTEIN - Turkey Meatloaf with Herbed Broccoli

Serve 8

Ingredients:

1 tablespoon olive oil
6 pounds ground turkey
2 cups pineapple or mango chutney
2-1/2 cups whole wheat bread crumbs

3 eggs, beaten
1/4 cup green pepper, chopped small
1/4 cup yellow onion, chopped small

4 tablespoons Italian herb seasoning
1 tablespoon garlic powder
2 teaspoons salt
1 teaspoon ground black pepper



Directions:

Preheat oven to 350°F.

Grease 2 standard loaf pans each with 1 tablespoon olive oil.

In large mixing bowl, combine ground turkey, chutney, and bread crumbs; mix well.

Separately combine green pepper, onions, eggs, Italian seasoning, garlic powder, salt and black pepper.

Then thoroughly mix together turkey mixture and vegetable mixture.

Transfer mixture into loaf pans, packing loosely but evenly.

Place loaf pans in oven and bake until firm, about 60-75 minutes, or until a meat thermometer inserted in center of loaf reads 165°.

Remove from oven and let cool.

Once cool, package for freezer.

Label with entrée name and date and freeze.

LABEL: Directions for Heating: Cook in 350° oven for 1 to 1-1/4 hours, or until food is hot.

Herb Roasted Broccoli

Serves 8

Ingredients:

2 tablespoons olive oil
3 pounds frozen broccoli florets
1/2 teaspoon dried leaf thyme
3 tablespoons garlic, minced
1/8 teaspoon salt
1/8 teaspoon ground black pepper

Directions:

Mix all ingredients together.

Package for freezer.

Label with name and date and freeze.

LABEL: Directions for Heating: Cook in in 350° oven for about 20-30 minutes, or until vegetables are hot.



Smart Nutrition for Improved Energy, Performance and Safety

Snacks and Hydration

There are three key times when you should take special action to maximize your performance and safety:

Before the fire

Before getting on the truck, or on the way to the fire, you should consume 5-8 ounces of water and eat an energy bar so you arrive at the fire hydrated and with your energy fueled. You will not have time after the alarm sounds to find these items, so it is important that you plan ahead and place these in a location where you can quickly grab them.

During the fire

When you take your break or refill your oxygen tank during the fire, be sure to visit the salvage truck and get some Honey Stinger® Energy Chews and 10-12 ounces of Gatorade®. You need this energy supplement and you need to rehydrate and replace electrolytes.

After the fire

Continue to rehydrate with Gatorade® or water and start consuming protein for muscle repair and replenishment while you are still at the fire location. Visit the salvage truck for Gatorade® or water and some Honey Stinger® 10 ounce protein bars. Taking 10 ounces of protein 15-30 minutes after the fire, rather than waiting 1-2 hours to start consuming protein, will triple the muscle glycogen in your system. When you get back to the fire station, continue to rehydrate and be sure to eat a high-protein meal to continue repairing muscle tissue.