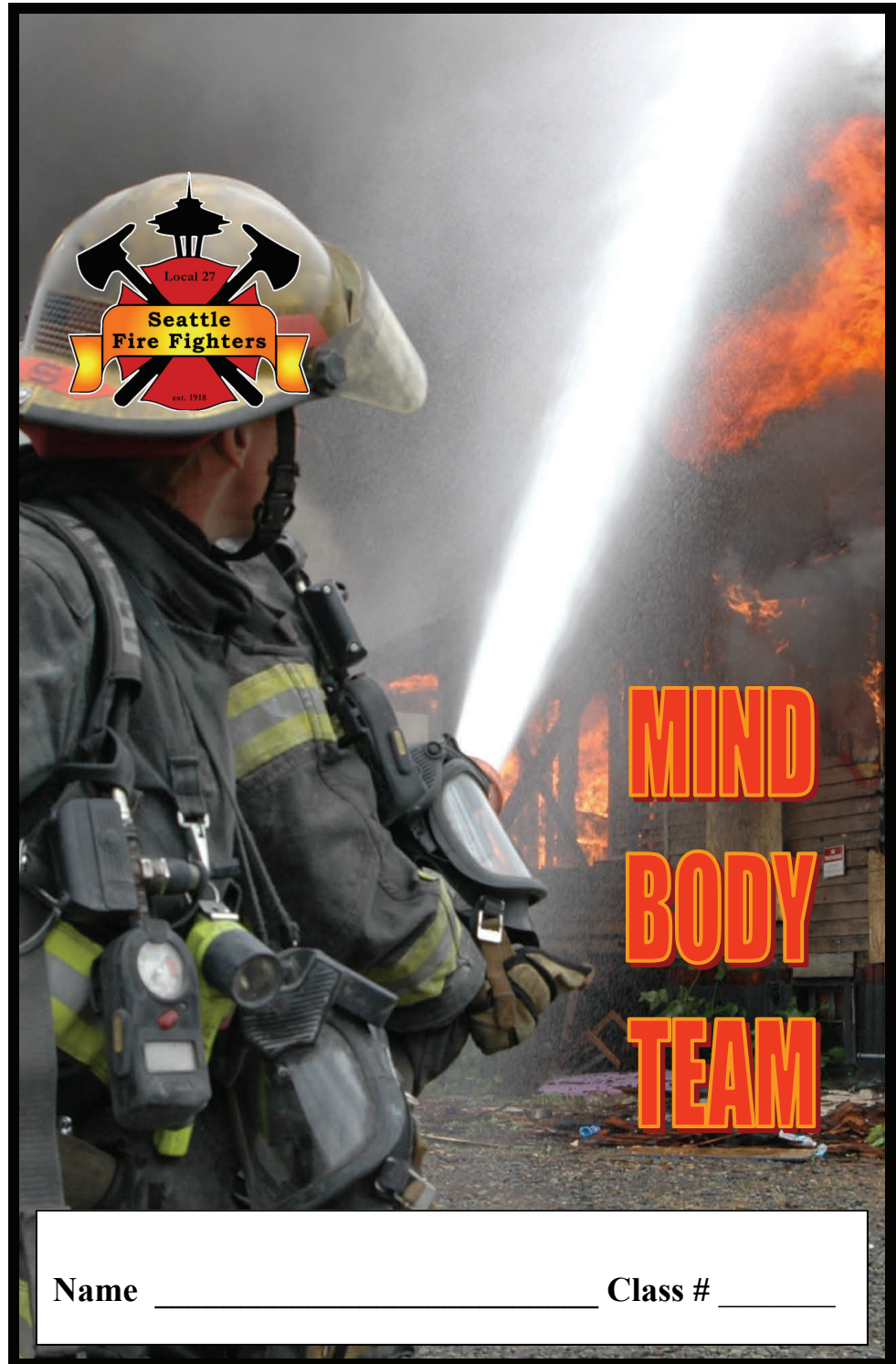




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2008



**MIND  
BODY  
TEAM**

Name \_\_\_\_\_ Class # \_\_\_\_\_



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## INTRODUCTION

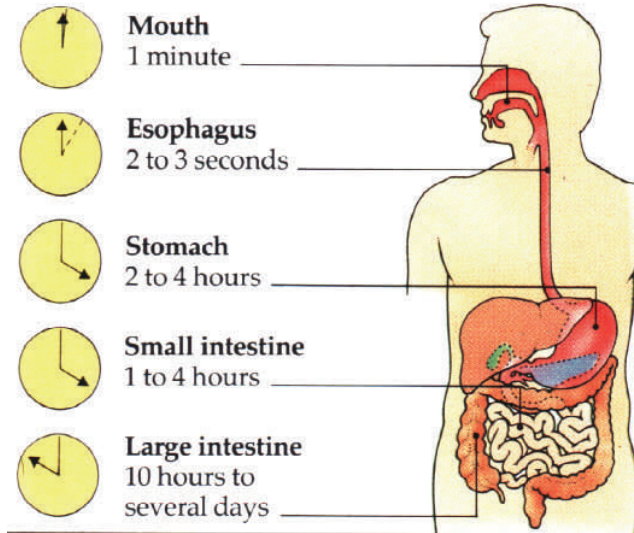
Welcome to the Seattle Fire Department!

Fire Service training programs are becoming increasingly competitive. More and more stress is being placed on how well you perform. Physical conditioning and prior experience aren't enough to push you to your best. To reach your highest potential, all of your body systems must be perfectly tuned.

This Handbook was specifically created for you, as a Seattle Fire Department Recruit, by Kim C. Favorite who is the Wellness Coordinator of the Seattle Fire Department and a Wellness/Fitness Technical Advisor for Seattle Fire Fighters Local 27 and the International Association of Fire Fighters. It is up to you to use the information, as part of your training program, to help you succeed in your quest of becoming a Seattle Fire Fighter.

## GETTING IT RIGHT

What you eat every day can have a big effect on how you perform. What you eat can be critical. Wrong choices can be disastrous. Right choices can give you that competitive edge.



*The above drawing shows the approximate time it takes for food to pass through each part of the digestive system. The length of time food spends in the stomach depends on the type of food eaten. Liquids pass through almost immediately.*

While the preclass meal can supply your body with significant amounts of energy, don't expect it to supply all the energy you'll need for the day. You should eat the right kinds of food for several days before class starts, and then every day until the end of class, to charge up your muscles with glycogen. Glycogen is a key energy source your muscles use during most recruit school activities. Although the preclass meal won't cause large increases in muscle glycogen, it will:

1. Help avoid hunger during the morning session
2. Stabilize blood-sugar levels and add some food energy to complement existing energy stores of muscle glycogen
3. Hydrate the body (supply water to the body's cells)
4. Provide a relatively empty stomach before the start of heavy physical exertion
5. Prevent gastrointestinal upset or other adverse reactions to food.

## NOTES

**Monday Week 1** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 2** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 3** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 4** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 5** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 6** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 7** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 8** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 9** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 10** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 11** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 12** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 13** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 14** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_

**Monday Week 15** Heart Rate \_\_\_\_\_ Weight \_\_\_\_\_



## PROPER BREATHING TECHNIQUE

Most people are thoracic or chest breathers. Although this may be the norm, it must be changed for peak performance. Diaphragmatic breathing is important here because it increases the amount of oxygen taken into the blood stream and increases right brain activity.

*Which type of breather are you? While lying on your back, place your hand on your abdomen, just below the rib cage. Take a deep breath. As you do, notice how your hand moves. If you are a diaphragmatic breather, your hand will move up. If you are a thoracic breather, your hand will move only slightly, if at all, or even down.*

If you are a diaphragmatic breather, congratulations! This will be a great review for you. If you are a thoracic breather, the following steps must be practiced before moving on to more strenuous physical activities.

### Step 1. Focus on Your Abdomen

- Place your hand on your abdomen. Exhale, emptying your lungs completely.
- Take a deep breath.
- Feel your lower abdomen expand, creating a vacuum in your chest cavity, and causing air to be drawn into your lower lung.
- As your lungs' middle regions fill, your upper abdomen expands.
- While you continue inhaling, your chest expands, filling the upper regions of your lungs.

### Step 2. How to Breathe

- Exhale, empty your lungs completely.
- Take a deep breath. Do you inhale through your nose, or your mouth?
- Exhale. Do you exhale through your nose, or through your mouth?

### Step 3. Correct Breathing

- Take a deep breath through your nose, filling your lungs completely.
- Exhale through your mouth, feel the air pass through your
- Inhale through your nose; exhale through your mouth.

### Step 4. The Total Action

- Take a deep breath through your nose
- First your lower abdomen expands, then your upper abdomen, and finally your chest
- Hold your breath for ten seconds.
- Release your breath with a sigh, exhaling through your mouth.

*Practice these steps several times until you can do them freely and comfortably. Then, check yourself daily until you become a diaphragmatic breather. It will become very beneficial during times of fatigue or stress.*

No one pre-class meal is right for every recruit or every day, but some food choices are much smarter than others are. General guidelines for individual food selection and meal planning are on the following pages.

### Make sure you -

- *Allow enough time for digestion. Eat the meal at least two hours before the start of heavy physical exertion.*
- *Choose a meal that's high in starch. Starch is easy to digest and helps steady the levels of blood sugar.*
- *Consume only moderate amounts of protein. Protein foods take longer to digest than starch. And high-protein meals may lead to increased urine production, which can add to dehydration.*
- *Limit fats and oils. They take too long to digest.*
- *Restrict sugary foods. Sweets can cause rapid energy swings in blood sugar levels and result in low blood sugar and less energy.*
- *Avoid foods and drinks that contain caffeine. Caffeine stimulates the body to increase urine output, which can contribute to dehydration problems, and a full bladder can be very uncomfortable.*
- *Watch out for foods that produce gas. Certain raw vegetables, fruits, or beans may cause problems for some recruits.*
- *Be aware of the foods that cause you problems, and avoid them during recruit school.*

Within these guidelines, choose foods you like to eat. What you eat day in and day out provides you with the nutrients and energy to sustain you over the long haul.

**Remember to drink plenty of fluids with your preclass meal.**

## KEEPING YOUR FLUID LEVELS UP!

Water is a basic necessity for all life. Without it, life can't exist. Even when water is limited, living organisms suffer. You are no exception. For recruits like yourself, not enough water means you can't do your best. It can even cause serious health problems.

Our blood circulates like an ocean within us. The water in blood helps carry nutrients and energy to our body cells. It also carries waste products away from our cells for excretion from our body. Water helps regulate our body temperature, too--an important factor for all of us.

As a recruit, you have a special need for water. When you're drilling, you burn a lot of food energy (called calories). Some of that unleashed energy powers muscles. Also remember, some of that energy is released as heat. Water keeps you from overheating. Sweating and evaporation from the skin cools you down. However, water is lost in the cooling process. That can be dangerous if the water is not replenished. If you run low on water, your body can overheat, like a car that is low on cooling fluid.

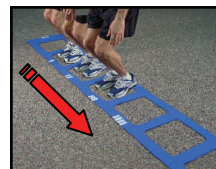
- *Losing two percent of the body's water can hurt performance.*
- *A five-percent loss can cause heat exhaustion. A seven percent to ten percent loss can result in heat stroke and death.*
- *Dehydration can kill.*

Water is vital for your body's growth, repair, and physical activity. Thirst is your body's signal that you need to drink water. By the time you feel thirsty, you may have already lost one percent to two percent of your water--and that's enough to hurt performance. However, just drinking enough to satisfy your thirst may not supply your body's needs. If you drink only enough to satisfy your thirst, your body may take up to 24 hours to fully rehydrate its cells and regain maximum performance.

**REMEMBER to follow these guidelines:**

1. *Don't wait until you are thirsty before drinking water.*
2. *Drink more than enough to satisfy your thirst.*
3. *Drink more than you think you need before an event or practices to make sure you are fully hydrated.*

**Conditioned recruit need more water--not less.** The conditioned recruit is able to store and burn more energy in a shorter time. That means your body releases more heat, requires more cooling, loses more water, and needs more water to replenish its stores. Also, you may have increased your sweating response, which means you lose even more water. As an in-shape recruit, you need more water than other people do.



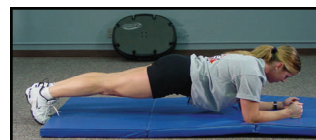
### Ladder Jumps Cont.

- Rapidly hop the length of ladder starting with Right foot in opening, Left foot out, pattern.
- Run back to ladder start and regain ASB.
- Standing, with Right side to ladder, rapidly jump sideways, with both feet, down latter length.
- Repeat entire sequence until time ends.



### 4. Superman with Truck Flexion

- Stand with feet together and ASB.
- With left leg slightly bent, bend at the waist raising right leg back so shoulders and heel are in line.
- Hands are forward, out to the side or on the supporting leg if balance cannot be held.
- Hold for a count of 2.
- Bend forward from the hips.
- Touch the floor, then return to standing start, keeping back straight and knee slightly bent.
- Regain ASB.
- Repeat on opposite leg.
- Repeat entire sequence until time ends.



### 5. Prone Plank

- Lying face down, shoulders elevated supported on elbows.
- Raise hips and legs off floor, body supported on elbows and toes.
- Straight line from shoulder through hip, knee, and ankle.
- Hold for 60 seconds.

*If ASB or form is lost during any part of the exercise drop down to knees until time ends.*

### 6. Up and Over

Run up seven (7) story tower and return down fire escape.

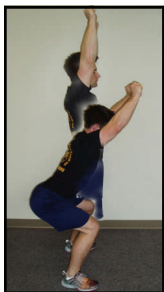
## RECRUIT WARM-UP -- Phase I

### Warm-up drills are done twice a day.

The first few weeks these functional, exercises will be used to assist you in preparing your body for a full day of training. Each exercise will be performed for at least **one** minute. Recruits will rotate to exercise stations while staying in assigned groups.

*During all exercises be sure to draw your lower abdomen inward toward your spine keeping shoulder blades down and back.*

*Abdomen, Shoulders, Back (ASB)*



### 1. Squat with Arms Overhead

- Arms are overhead with elbows extended, back straight, head up.
- Feet are shoulder width apart, pointed straight ahead.
- Keep weight on the heels.
- Bend knees and do a half squat keeping heels on the ground.
- Regain ASB and repeat sequence until time ends.



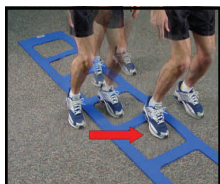
### 2. Twist and Under Medicine Ball Pass

- Make sure there is a comfortable reach between partners.
- Starting member brings ball to waist then rotates upper torso (keeping ASB) handing ball to receiving partner.
- Regain ASB, bending forward from the hips, pass ball under legs to partner.
- Repeat the full sequence changing direction of twist pass until time ends.

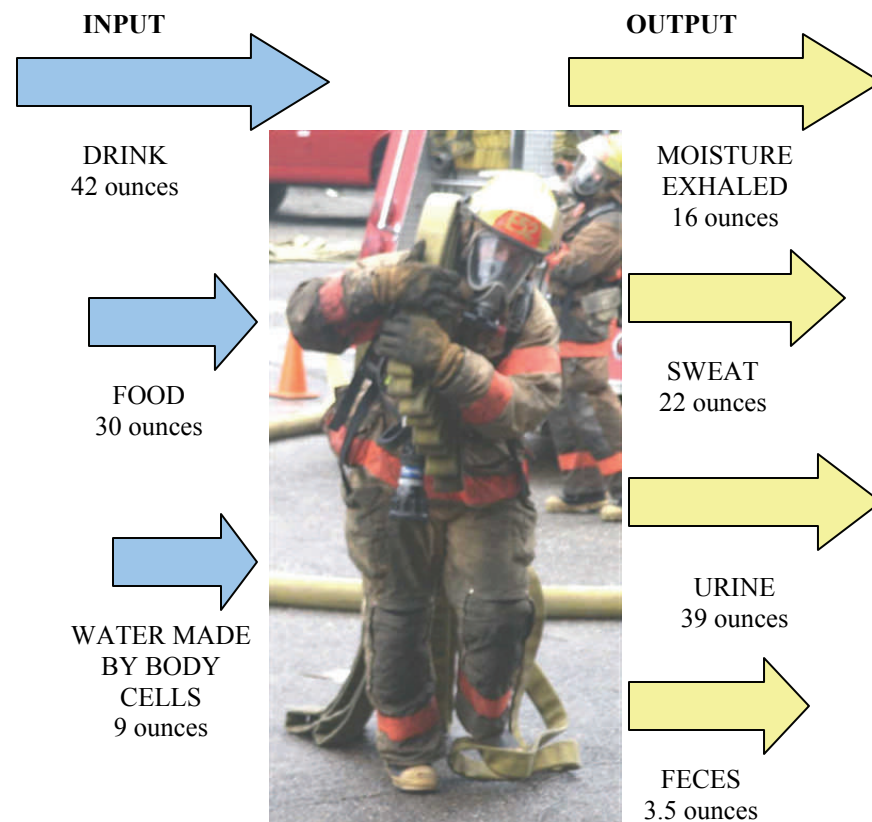


### 3. Ladder Jump

- Stand at end of a plyometric ladder with left foot in and right foot out.
- Rapidly hop the length of ladder alternating on each hop:
- Left foot in center opening, right foot out.
- Right foot in center opening, left foot out.
- Run back to ladder start and regain ASB.
- Standing, with Left side to ladder, rapidly jump side-ways, with both feet, down latter length.
- Run back to ladder start position and regain ASB.



## WATER INPUT/OUTPUT



*To prevent dehydration, the amount of water lost from the body must be matched by the intake. The amount of sweat varies according to the climate and a person's level of activity. You must replace fluids lost by an increase in sweating. During warm weather, a recruit can lose 8 to 10 pints (128 to 160 fluid ounces) of water during an afternoon session. It is extremely important for him or her to replace the lost fluid by drinking adequate water, since dehydration can make it impossible for the body to regulate its temperature.*

## Keeping Your Fluid Levels Up Cont.

When you feel exhausted and hot, drinking large amounts of water very rapidly may cause discomfort or stomach cramps. Drinking moderate amounts at frequent intervals is the best strategy.

**About one cup (six to eight ounces) of cool water every 15 to 20 minutes during heavy activity is about right for most recruits.** Cool water (40 to 50 degrees Fahrenheit) is best. Cool water helps absorb body heat. In addition, it empties from the stomach into the intestine at a fast rate, which allows it to be absorbed rapidly into the body.

Most of the weight you lose during an event or training session is water lost through sweat. Of course, you lose some weight when your body burns materials for energy. However, most of the weight you lose during strenuous physical activity is water lost through perspiration.

Some recruit officers and trainers weigh recruits before the day starts and then again at the end of the day. Before the recruits leave the facility, they are encouraged to drink water until they are within one pound of their morning weight. Two eight-ounce cups of water are consumed for each pound lost. This practice--weighing in, weighing out, and drinking the difference--is an excellent way of guarding against dehydration. You can do this on your own even if your officer doesn't require it.

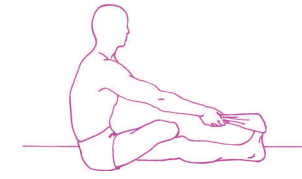
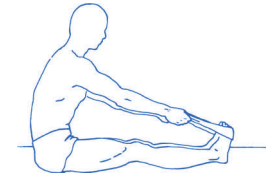
**Dehydration poses both short- and long-term dangers to your health.** In the short-term, your body's cooling system can't work properly and you can overheat, suffer heatstroke, and possibly die. Long-term, repeated episodes of dehydration can be damaging to your kidneys.

**The most common outcomes of dehydration are poor endurance and poor performance.** Some recruits mistakenly believe that after purposely dehydrating their bodies, they can rapidly rehydrate and almost immediately regain optimum performance. While drinking plenty of fluids is the right thing to do after becoming dehydrated, it may take many hours before your body completely rehydrates and you can perform your best. Some drinks that have caffeine, such as colas and iced tea, are advertised as thirst quenchers.

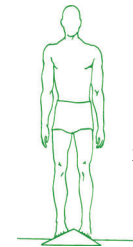
**Do not use caffeine-containing beverages as fluid rehydration drinks shortly before, during, and after class.** Caffeine acts as a diuretic. It increases urine output and can promote dehydration.

Your biggest concern is getting enough water--pure, cool water. Even the salt you lose while sweating can be easily replaced by adding salt to foods. Plain, cool water is the fluid of choice when the actual exertion time does not last longer than 60 to 90 minutes. You don't need an energy source in the fluid you drink to rehydrate.

## Related Exercises:



1. Exhale, lean forward, and grasp hold of feet (foot) using a towel
2. Exhale, keep extended leg(s) straight, and pull on foot.
3. Hold the stretch and relax

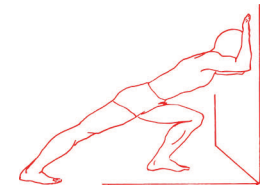
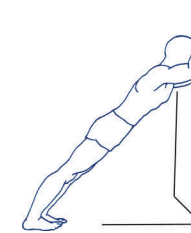


1. Stand upright on an incline board cut at a 45 degree angle.
2. Hold the stretch and relax.



1. Place an incline board facing a wall.
2. Stand on the board with hands flat against the wall and lean forward.
3. Hold stretch and relax.  
**\*\* Can also be done with back against the wall with arms down at your sides. You should be able to hold this position for at least 10 minutes - without pain.**

1. Stand 4-5 steps from a wall.
2. Lean against the wall without losing the straight line of the head, neck, pelvis, legs, and ankles.
3. Keep heels down, flat, together, and parallel to hips.
4. Exhale, bend your arms, move your chest toward the wall, and shift your weight forward.
5. Hold stretch and relax.



\* Can also be done by bending one leg while keeping your opposite leg straight.

### To help prevent shin splints:

- \* Make sure your boots and inserts (if you use inserts) fit properly.
- \* Spend time slowly breaking in your footwear prior to the start of Recruit School.
- \* Stretch your lower leg areas every night, every morning, and when possible - between evolutions.

## SHIN SPLINTS

During the first few weeks many recruits experience pain in the calf or shin area. More often than not this is from an increase in work levels while on a hard surface. There are several types of overuse injuries that may develop in this region as a result of the repeated pounding on a hard surface. Shin splints, stress fractures, and chronic compartment syndrome (a medical emergency) have a common mechanism of development – they are all over use injuries.

The overall recurring theme that leads to overuse injuries is the lack of adequate pre-training compounded by excess training with little recovery time. Excess and inadequate are relative terms and must be judged against one's usual training routine. The more that excess and inadequate deviate from the usual training routine the less time it takes for an overuse injury to develop.

The term shin splints refers to a painful condition that develops along the inside (medial edge) of the shin (tibia) usually located along the lower half of the tibia, anywhere from a few inches above the ankle to about half-way up the shin. There is frequently a tender zone along the medial edge of the tibia that one can map out by pressing with the fingertips as they “march up” along the bone. In the early stage of shin splints you may have pain that is present when evolutions first begins, but then disappears as evolutions continue. The pain can often return after breaks or the following morning.

If shin splints go un-checked you will experience more time with the pain, and less time without it. Your pain should never get to this point. ***If you should develop any pain that lasts more than a day, notify your instructor.*** Adjustments may have to be made.

### There Are Many Styles of boots.

***Take plenty of time to make sure you have the best boots for your feet.***

How you feet and body feel in week two and three is more important then what the boot looks like! Recruits with high rigid arches tend to experience greater pounding shock, whereas those with flat feet tend to experience greater fatigue of the muscles that support the foot -- and push-off. Both tend to develop shin splints. Therefore along with proper sizing you need to match the type of boot to your specific body biomechanics.

### **MAKE SURE THAT YOU**

***take the time to break in all footwear before class starts!***

## Don't Let Your Diet Let You Down

Peak performance is not easy. It doesn't just happen. High energy levels are the result of good eating and exercise habits. If you don't pay attention to either of these factors, your performance can suffer.

***One of the least-recognized nutrition problems of most recruits is simply not eating enough. Extracurricular activities may make life so busy that you simply don't take the time to eat. Long sessions may be so exhausting that you feel too tired to eat. However, you must take the time to eat the right foods. Don't let fatigue caused by poor eating hurt your performance.***

Another problem is not eating the right kinds of foods--particularly foods high in starch. Eating a balanced diet, that has plenty of starch, keeps muscle energy up. Many recruits eat more foods high in protein instead, and that's a mistake. A normal diet contains enough protein to support the added muscle growth and development of most recruits.

Participating in recruit school can drastically increase your food energy needs. Increased physical activity calls for more food calories. Also, when you train, you increase muscle tissue relative to fat tissue, and muscle tissue requires more calories than fat tissue. Recruit school will automatically increase the daily calorie needs of a recruit by 2,000 or more. Some may need an increase of 5,000 or more calories daily for the first eight weeks.

### Caloric Intake

An average male will normally consume 2,300-2,900 calories a day. An average women would consume 1,900 -2,200 calories a day. So, if we take 2,500 calories, as an average amount consumed, and compare it with the average calories expended during Recruit School we would have the following:

Weekday	Calories Expended	Average Intake	Net Calories
Monday	3800	2,500	-1,300
Tuesday	9200	2,500	-6,700
Wednesday	9200	2,500	-6,700
Thursday	9850	2,500	-7,350
Friday	8750	2,500	-6,250
Sat	2700	2,500	-200
Sun	2700	2,500	-200
			<b>-28,700</b>

TOTAL

## What Does This All Mean?

If you are still consuming the same amount of calories as you were before you entered Recruit School you are more than likely actually consuming less than half of your daily requirement of calories. Research shows that you would be losing weight, your energy levels would be decreasing, and your reaction time would be getting slower as the weeks went on!

*Researchers measured the participant's reaction time by programming a white star to appear on a computer screen and measuring how long it took subjects to hit the space bar on the keyboard. Conventional wisdom says that when one knows what the test item is, and when one is conditioned by practice over time, the test score will improve. With those who had daily caloric counts of half their caloric expenditure the test scores decreased instead of increasing. Reaction time actually lengthened*

So, what we are looking at? Start by increasing your protein intake, **more than tripling your water intake** and getting up (from an average of 4000 calories) to 7000-8000 calories per day. You need to do this at a rate that will increase your energy level now, but not over tax your system. In other words, don't double your food intake overnight. It would be just another way of shutting your system down.

## PLAN AHEAD

Have your favorite, quick foods on hand during the class. All-day, on the drill court, situations can present special problems. On some days, you may have to eat several "mini" meals over the day. Each meal should be small (under 300 calories) and low in sugar and fat. Even though schedules can be hectic, try to avoid eating large amount of food within one hour of heavy physical activity. During breaks or class time, when approved, eat small meals. After a few days, you will get a feeling for what you need on different days – but be prepared for anything. Make the most of a bad situation and remember that the basic pre-class meal guidelines still apply.

**Remember:** Eat foods you like and that agree with you. You are an individual with your own tolerances for foods. Choosing foods you like may give you a psychological edge. This isn't the time to start trying new things! Sometimes it is impossible to purchase suitable foods, in the short time allowed, at places around the Training facility. A recruit refrigerator and microwave are available for snacks and lunches. Bring what you need for you to make it through the day - and the drive home. *If you should forget your meals- let your officer know so that we can be sure and correct the situation at the start of the day.*

**Above all, drink plenty of fluids.**

**Dehydration can be a very real danger during recruit school.**

## Transfer Your Brain to the Paper

If your mind is too active, you'll have trouble falling asleep. Set aside your worries and calm your mind before going to sleep by writing each thought on a 3x5 card on the nightstand. Jot down a potential solution, or a time during waking hours when you'll address the problem. Leave it there for the night and get some sleep.

## Bedtime Relaxation Techniques

Here are some tips from the Better Sleep Council

### Progressive Muscle Relaxation (PMR)

Try tensing and the relaxing your muscles in groups, starting from the toes and slowly working up the body to the eye muscles and forehead. Squeeze tightly for five to ten seconds, then release and relax for fifteen to twenty seconds before moving upward to the next group.

### Deep Breathing

Take five deep breaths, and as you count each one, say to yourself, "I'm getting more relaxed, peaceful, and serene. I'm slowly falling asleep." Concentrate only on this message.

### Yoga

Relax and inhale to the count of five. Raise your arms backward over your head until they touch the mattress. Make two fists and raise your buttocks. Tense and stretch every muscle, including your face. Then, arms still raised, let all the tension drain from your body.

### Mind Games

Imagine you're writing six-foot-high numerals on a large black board. Start at one hundred and count backward. You probably won't make it to fifty.

## Learn to Value Sleep

If you want to be at your best, you must learn to value good sleep. You must do everything within your power to respect the needs of your body for rest. Leave the all-nighters and the late night partying to others who don't care about their daytime alertness.

***You owe it to yourself not to settle for anything less than being wide-awake and dynamic – at your best – all day long!***

## SLEEP

*Sleep plays a major role in preparing the body and brain for an alert, productive, psychologically and physiologically healthy tomorrow.*

### Establish a Bedtime Ritual

Go to bed at the same time every night, and wake up the same time every morning, including weekends. Keeping a regular schedule will make you feel significantly more alert than sleeping for the same amount of time but at differing hours across the week and the weekend.

When you know you need more sleep - try going to bed earlier than usual on the weekends. **BUT DON'T SLEEP IN!** If you sleep in, or take long (more than 20 minutes) naps, it is likely to make it difficult to get to sleep at the usual time the following night. This may not be easy, but the resulting alertness, mental and physical functioning will be more than worth the discipline.

### Stop All Nicotine

Nicotine is an even stronger stimulant than caffeine. Because nicotine withdrawal can start two or three hours after the last puff or chew, most individual wills wake in the night with a craving for nicotine. Nicotine also stimulates brain-wave activity and increases blood pressure and heart rate. Neither of these is beneficial to your performance on the drill court.

### Reduce Caffeine Intake

Six to eight hours before bedtime avoid all products containing caffeine. These include coffee, tea, various soft drinks, and chocolate products. As stimulants they delay sleep onset and disturb REM sleep, the period in which dreaming usually occurs.

### Avoid Alcohol Near Bedtime

Avoid having any alcohol within three hours of bedtime if you expect to sleep well. A small amount of alcohol before or during dinner, if you already have this pattern, won't make too much difference in your sleep.

**NEVER use alcohol to help yourself fall asleep.** You might indeed fall asleep quickly, but your sleep will be disturbed; both NREM (deep, restorative) and REM (active, dreaming) sleep will be suppressed, and you will experience morning awakenings – often with a hangover.

Alcohol at bedtime can also start or aggravate sleep apnea, a sleep disorder that causes you to stop breathing for up to ninety seconds several hundred times each night. Moreover, that can become fatal if not corrected.

Avoid alcohol at all times when you feel you are sleep-deprived. One drink of alcohol can make you stone drunk. Sleep deprivation greatly magnifies the effect of alcohol, regardless of your physical build.

## Select Food That Are Best For You

**Pasta:** Macaroni, spaghetti, noodles, ravioli (plain or with sauce) Meats, cheese, and oil add fat to the sauce. Use them sparingly.

**Rice:** Use a sauce low in fat and only as spicy as you can tolerate easily. Alternatively, try rice with a little soy sauce flavoring.

**Potatoes:** Baked, boiled, mashed, but not french fries. Limit butter, gravy, or sour cream.

**Starchy vegetables:** Peas, carrots, winter squash, sweet potatoes. Cooked vegetables are more easily digested.

**Breads:** Rolls, muffins, crackers, quick breads, bagels. Use nutritious, low-fat bread products and spreads.

**Cereals:** Oatmeal, other hot and cold cereals. Avoid cereals with high sugar content.

**Soups:** Noodle, rice, vegetable, clear broth, bouillon, or consommé. Choose low-fat soups. Eating large portions of chili, split pea, or bean soups may lead to digestive problems for some recruits.

**Pancakes:** Limit butter and syrup.

**Fruits, fruit juices:** Use any juice or cooked fruit except prune. Oranges, bananas, and peeled apples are easily digested raw fruits. You may wish to dilute juices, especially in hot weather. Try hot cider or juice during cold weather.

**Milk products:** Low-fat milk, low-fat yogurt, low-fat cottage cheese, low-fat cheeses, puddings, "shakes" made with low-fat milk or yogurt and fruit and/or juice. Avoid high-fat milk products on days you will be on the drill court.

**Liquid meals in a can:** Though not a substitute for solid foods in the daily diet, liquid meals are convenient for occasional use. You can make liquid meals at home using the following recipe, which makes about one quart: 1/2 cup of water, 1/2 cup of nonfat dry milk, 1/4 cup of sugar, 3 cups of skim milk, Flavor with a teaspoon of vanilla or cherry extract.

**Fruit-flavored drinks:** Many drinks contain little fruit juice and a lot of sugar. Read the label.

**Candy, sugar, honey:** After an initial rise, your blood-sugar level can actually drop below normal, resulting in a sudden feeling of tiredness or fatigue.

**Tea, coffee, chocolate, cola:** Caffeine consumption leads to dehydration and on long days tiredness and fatigue.

**Fried foods, high-fat meats, fats, oils, gravies, sour cream, etc.:** Fat digests slowly and therefore stays in the stomach longer.

**Some raw fruits, vegetables, popcorn, nuts, dry beans and peas:** Some of these foods may cause gas and/or an uncomfortable feeling of fullness during the day. A recruit needs to avoid the foods that give him or her problems.

### Any new food:

*Don't experiment with new foods.*

*If you experience any adverse reactions, your body has little time to recover.*

## GLYCOGEN – Your Best Friend

The glycogen stores you have available right before are the result of how you've eaten and exercised for the past several days. Glycogen stores in the body are increased by rest or light levels of exercise and high levels of carbohydrates (particularly starch) in the diet. High levels of exercise and low levels of starch in the diet lower glycogen stores in the body. Once glycogen stores are exhausted, it takes **at least two days** to fully restore them. Although the preclass meal can stabilize blood sugar levels and provide some energy, don't look to the any one meal to provide the bulk of your energy for the day.

You should eat a nutritious, varied diet containing plenty of starchy foods every day. Give starches particular emphasis on you off days. Also, cut back or eliminate workouts during the first five to seven weeks of recruit school so as to increase glycogen stores. Most recruits eliminate workouts one week prior to the start of recruit school. This gives glycogen levels a chance to build up.

Here are some tips to help you keep your glycogen reserves up.

- Start each day with a good breakfast. Cold cereal, milk, toast, fruit, and/or fruit juice make an easy-to-fix, quick meal that provides plenty of starch.
- Select meals that contain foods from all five-food groups. Our bodies use nutrients more efficiently when they are consumed together.
- Use snacks as another opportunity to power up with starch--and don't forget that snack at bedtime. Cold cereal with milk serves as a quick snack at any time. It can be more than the "breakfast" of champions! And you don't have to stop at one bowl full.
- Give starchy foods particular emphasis on class days by building the main meal around a high-starch entree like spaghetti and meatballs. Make sure the other food groups are also represented.
- Rest up!
- Drink plenty of fluids--even at mealtimes--to guard against dehydration.

After the morning session of a typical recruit school day, much of the glycogen in your muscle and liver tissue has been used up, and synthesis, or creation, of new muscle protein slows. To promote glycogen recovery, consume nutritious foods and drinks that are high in carbohydrates. When you eat the right foods, your body can replace lost glycogen rapidly, and normal synthesis of new proteins can resume.

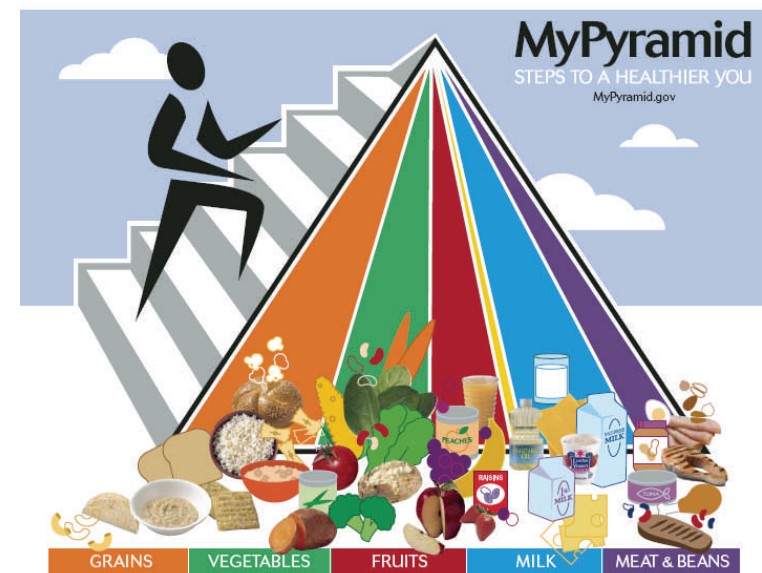
**Breads**  
Rolls  
Muffins  
Crackers  
Sliced breads  
Pancakes

**Starchy Vegetables**  
Potatoes  
Carrots  
Peas  
Corn  
Winter squash  
Sweet potatoes

**Dried peas**  
Split peas  
Lentils  
Black-eyed peas

Dried beans and peas contain some starch, and they can be used as a meat alternative because they contain ample protein. However, they can cause gas. Do not eat them for a preclass meal unless you tolerate them well.

Some examples of high-starched meals that will help build and maintain adequate muscle glycogen are listed here. Pick the meals you like to eat, or make up your own meal that follows the same pattern as the Food Guide Pyramid recommendations. How much you eat depends on many factors: your age, sex, body size, and amount of physical activity.



## How Can I Tell If I'm Eating Right?

The amount of food you need depends on your age, sex, weight, and activity level. A larger recruit requires more calories than a smaller one because more energy is needed to move more mass over the same distance. Activity levels vary between different sessions (truck verses engine) as well as with the position during a drill. The rate at which calories are burned for short periods of time may be greater from short bursts of intense activity during class. Everyone will burn more calories in the first half of recruit school than in the last half, because more total work is usually done during the first half.

If a recruit (who is in shape) starts to lose body weight during recruit school, it is a good indication that he or she isn't eating enough energy-providing food. The reverse is also true. If a recruit starts to gain weight it is time to re-evaluate the total number of calories consumed. Recruits should be weighed at least once a week throughout the class to guard against unhealthy weight losses or gains caused by improper food intake.

## Emphasize Starchy Foods

Recruits need plenty of starchy foods. These foods cause muscle and liver cells to store glycogen. Glycogen is a vital energy source for most sports. When muscle cells run out of glycogen, muscle fatigue sets in and performance suffers. Along with a proper exercise program, eating a normal, varied diet with emphasis on starchy foods will result in enough stored glycogen to carry you through 90 minutes of vigorous activity. This is not always enough for normal recruit school activities. You may even need to double this. Eating more than you need of any food puts on pounds but most recruits don't have to worry about gaining extra weight from starchy foods.

### Foods High in Starch

#### Pastas

Macaroni  
Spaghetti  
Noodles  
Ravioli

#### Dried beans

Lima beans  
Navy beans  
Kidney beans

#### Rice

Brown rice  
Wild rice  
White rice

#### Cereals

Hot cereals (like oatmeal)  
Cold cereals (like wheat flakes)

*Avoid highly sugared cereals polished or unpolished*

Whole foods like cereals, breads, and pastas with a glass of milk are better for total recovery than pure carbohydrate supplements. A mix of whole foods contain proteins, minerals, and vitamins in addition to carbohydrates. You need these other nutrients along with high levels of carbohydrates for a complete, rapid recovery.

*At a minimum, to insure that you get enough carbohydrates, take in one gram of carbohydrates for each kilogram (2.2 pounds) of body weight.* For example, a 156-pound recruit would need about 70 grams of carbohydrates for maximum glycogen replacement each day of recruit school. One ounce of breakfast cereal contains about 20 grams of carbohydrates, and one slice of bread has about 12 grams. Remember, whole foods, such as breads and cereals, when eaten with beverages like milk promote more rapid recovery than pure carbohydrates alone.

To assist in total, rapid recovery, you should consume nutritious foods and drinks as soon as you can tolerate them. Ideally, you should eat food within two hours afterward. If you cannot tolerate eating that soon, choose what's comfortable for you.

During these exertion times, if you have been eating and training properly, you should have enough energy stored as liver and muscle glycogen to power you through. However, in most situations where the exertion time is long or several drills occur in a short period of time, a sport drinks containing carbohydrates and electrolytes may offer you an advantage. If you feel you may be running low on energy and electrolytes you could use a sport drink. Pick one that has less than eight-percent total solids. Solutions that are more concentrated can delay fluid absorption. And must be diluted with plain water before you use them as a fluid replacement drink.

Fruit juices like orange juice should also be diluted if you're using them as a fluid replacement drink before, during, or after class. Fruit juices vary from 10% to 17% carbohydrate concentration. Dilute them with an equal amount of pure water before you use them as fluid replacement. Of course, when you drink juices on non-class days, such as with a meal or snack, you don't have to dilute them.

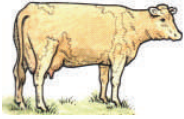
*Avoid sport drinks that contain fructose as the only source of carbohydrate. Fructose may delay gastric emptying of fluid and cause upset stomach. And fructose must first be converted to glucose before it can be used for energy. This conversion means you can't use fructose as an energy source as quickly as other carbohydrates.*

Getting it all down means you can perform at your best levels. Your endurance will be long lasting and you won't become as tired. You will have that extra edge when you need it most--whether it is the last few minutes of the day or the last 10 seconds of a drill.

## Milk, Yogurt, and Cheese

Milk, yogurt, and all types of cheese

Provides calcium. Also contains protein, vitamin A, and riboflavin (B2).



### 3 servings daily.

- 1 serving is
- an 8 ounce glass of milk
  - 8 ounces of yogurt
  - 1 1/2 ounces of natural, unprocessed cheese

## Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts

Beef, pork, lamb, poultry, fish, eggs, dry peas & beans, peanuts

Good sources of protein. These foods also contain thiamin (B1), riboflavin (B2), niacin, iron, and zinc.



### 2 to 3 servings daily.

- 1 serving is
- 3 ounces of lean, cooked meat
  - 2 eggs
  - 1 cup of cooked dry beans, peas, or lentils
  - 4 tablespoons of peanut butter

## Fruit

All fruits and their juices.

Good sources of many vitamins and minerals.

Good sources of vitamin C include citrus fruits and their juices, melons, and strawberries.

Apricots are good sources of vitamin A.



### 2 to 4 servings daily.

- 1 serving is
- 1 whole fruit - a medium apple, banana, or orange
  - 1/2 grapefruit
  - 3/4 cup (6 ounces) of juice
  - 1/2 cup (4 ounces) of berries
  - 1/2 cup (4 ounces) of cooked or canned fruit
  - 1/4 cup of dried fruit

*Foods such as butter, margarine, sweets, and jellies, should be used sparingly. These foods do provide energy and some nutrients. However, go easy on these foods and get your energy from foods that are more nutritious. Your body needs the additional vitamins and minerals to help it use energy.*

## Vegetable

All vegetables--including dark green, deep yellow, and starchy vegetables--and their juices

Provides vitamins and minerals that complement other food sources.

Good sources of Vitamin C include tomatoes, broccoli, and brussel sprouts.

Good sources of Vitamin A include carrots, broccoli, spinach, greens, pumpkin, and sweet potatoes.



### 3 to 5 servings daily.

- 1 serving is
- 1/2 cup of cooked vegetables
  - 1/2 cup of chopped raw vegetables
  - 1 cup of leafy raw vegetables such as lettuce or spinach
  - 3/4 cup (6 ounces) of juice

## Bread, Cereal, Rice, and Pasta

All whole-grain and enriched breads and cereals, such as cooked or ready to eat cereals, bread, macaroni, grits, spaghetti, crackers, noodles, and rice contributes complex carbohydrates (starch and fiber) and significant amounts of protein, B vitamins, and iron.

### 6 to 11 servings daily.

- 1 serving is
- 1 slice of bread
  - 1/2 hamburger bun or English muffin
  - 1 small roll, biscuit, or muffin
  - 3 to 4 small or 2 large crackers
  - 1/2 cup cooked cereal, rice, or pasta
  - 1 ounce ready-to-eat breakfast cereal



*To meet increased energy needs, recruits require the highest intake of food energy. For most recruits, the increased energy should come from the vegetable group and the bread, cereal, rice, and pasta group. Foods in these two groups contain a lot of starch, which is an excellent source of food energy.*

**By eating the recommended amounts of food from each group daily, you can greatly increase your ability to get all the nutrients your body needs--and that will improve your ability on the drill court.**