



October 8, 2022

# Training Program

Louisville Sports Commission  
Urban Bourbon Half Marathon  
[UrbanBourbonHalf.com](http://UrbanBourbonHalf.com)

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Sports Medicine

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# Urban Bourbon Half Marathon

On October 8, 2022, the Urban Bourbon Half Marathon presented by Jim Beam® will offer Louisville-area walkers and runners an exciting experiential event on which to focus their training efforts. This year's race celebrates and promotes 200 years of Louisville and Kentucky distilling history. The Urban Bourbon Half Marathon presented by Jim Beam® is restricted to those age 21 and older; participants must be age 21 by October 8, 2022.

Your decision to participate in our 11<sup>th</sup> annual half marathon should be a source of pride and anticipation, regardless of your level of skill or previous accomplishment in races of any distance. It has been said there is strength in numbers, and as you train toward October 8, you will find plenty of support with fellow runners, walkers and the experts of our official training program. Designed by UofL Health – Sports Medicine, it is a tried-and-true program that gives you the best tools and tips necessary to perform at an optimum level. This eight-week training program allows you to put forth your best effort in the event and, by participating in the training program, we are confident that you will not just survive, but thrive as you cross the finish line.

The Louisville Sports Commission is a Kentucky-based 501(c)(3) organization whose mission is to attract, create, and host quality sporting events in the Louisville area that increase economic vitality, enhance the quality of life, promote active lifestyles and brand Louisville as a great place to live, work and play. This event was developed to promote active lifestyles in our community, specifically to entice runners such as you to train later into the fall season.

We have partnered with numerous local companies to enhance your race-day experience. We also have a dedicated race manager who brings years of knowledge and expertise as a race director to make sure your training and competition goes smoothly. During the race, hydrate with Louisville Pure Tap™ from the Louisville Water Company and Powerade® from our local Coca-Cola® bottlers. After you cross the finish line, be sure to join us for our post-race Urban Bourbon Bash that will include tastings from the Jim Beam portfolio of bourbons along with a selection of other Kentucky bourbons, pizza, beer, Kentucky burgoo and a three-hour concert by the Louisville Crashers, the region's premiere pop rock party band. Check our website [urbanbourbonhalf.com](http://urbanbourbonhalf.com) for more information.

We raise our glass to toast you for making the decision to train for and finish the Urban Bourbon Half Marathon and will be waiting for you at the finish line.

Cheers!



Karl Schmitt  
President & CEO presented by Jim Beam®  
Louisville Sports Commission

# Urban Bourbon Half Marathon Training Program

The 2022 Urban Bourbon Half Marathon presented by Jim Beam® is just around the corner! We're so pleased that you have chosen to participate in our UofL Health – Sports Medicine Urban Bourbon Half Marathon Training Program.

Our Sports Medicine programs offer a comprehensive range of services including education, prevention, treatment, rehabilitation and wellness from specially trained and certified staff, ensuring the highest quality of care possible. Licensed athletic trainers, physical therapists, physicians and other health care professionals in the area of sports medicine work together to provide elite athletes and “weekend warriors” alike, a holistic approach to care, no matter the level of competition.

Our goal is to keep athletes of all stages in life in peak physical and mental condition through a proactive approach to health and fitness.

Thank you for participating in this training program. It is our privilege to be your partner as you begin preparing for this year's event.

Sincerely,



Jennifer Daily, M.D.  
Medical Director  
UofL Health – Sports Medicine



# Is it Safe for You to Start a Running Program?

For most people, running is a great way to either get in shape or stay in shape. It helps control weight and provides immense cardiovascular benefits. The majority of people can feel comfortable about initiating an exercise program without risk, but there are certain people who should consult with a physician prior to initiating a program.

**Please review the questions below to see if it is advisable for you to consult with a physician. These are adapted from the Physical Activity Readiness Questionnaire (PAR-Q).**

- Has a doctor ever diagnosed you with a heart condition, high blood pressure or restricted your activity in any way? .....  YES  NO
- Do you take any medications for a heart condition or high blood pressure? .....  YES  NO
- Do you experience chest pain with or without activity? .....  YES  NO
- Do you experience dizziness that causes you to lose balance? .....  YES  NO
- Have you ever passed out or lost consciousness? .....  YES  NO
- Have you been diagnosed with diabetes of any kind or a chronic kidney disease? .....  YES  NO
- Do you have any bone or joint problems that are worsened by activity? .....  YES  NO
- Are you 70 years of age or older and starting a new exercise program? .....  YES  NO
- Do you know of any reason you should not participate in physical activity or have ANY concerns about your health? .....  YES  NO

If you answered YES to any of the above questions, it is recommended that you consult with your primary care physician prior to initiating an exercise program. If you don't have a primary care physician, consider making an appointment with us at the Owsley Brown Frazier Sports Medicine Center by calling 502-637-9313. We can evaluate whether it is safe for you to begin a training program, manage sport-related medical problems or assess any injuries you may suffer along your journey.



## Training Tips

1. Get a thorough medical exam prior to beginning any running program.
2. Seek medical attention with injuries. Don't let little aches and pains turn into bigger problems by not seeking timely medical advice.
3. Go slow! The biggest mistake runners make is going too fast. The best way to judge your pace is by using the "talk test." Run at a comfortable pace that allows you to talk with a training partner.
4. Observe the "rules of the road." Watch out for cars; don't expect drivers to look out for you. It is best to run facing traffic so that you can see approaching cars in case action on your part is necessary.
5. Dress properly. Use common sense. If it's dark, wear white or reflective clothing. If it's cold, wear layers of clothing, gloves and a wool ski cap to retain heat. On hot sunny days, use sun block, sunglasses, a sun protective hat and light-colored clothing.
6. Wear running shoes, but don't continue to wear worn-out shoes. Purchase your shoes at a specialty store where staff is knowledgeable. As simple as it sounds, running shoes should only be used for running. It is usually time to replace shoes after 400-500 miles (so maintain your mileage log).

## Your UofL Health – Sports Medicine Training Team



Jennifer Daily, M.D.  
Medical Director



Brett Hayes, MSPT  
Administrative Director



Neil Patil, M.D.



Kelli Bisig, PT



Jason Bracco, PT, DPT



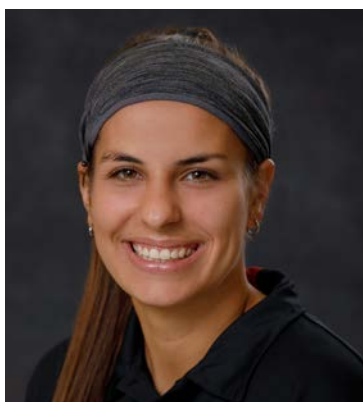
Steve Hoelscher, MS, LAT, AT



Jon Holland, PT



Christy White, PT



Taylor Zuberer, AT-C

Call **502-62-SPORT (77678)** and talk with a member of the UofL Health – Sports Medicine team for more information, or visit us at [UofLHealth.org/Sports-Medicine](https://UofLHealth.org/Sports-Medicine).

# Fueling Up for the Races

## **Eat regular, well-balanced meals.**

If you don't eat breakfast on a regular basis, or come close to three meals a day, now is the time to start. Regular, well-balanced meals are important for strength and stamina! High fiber cereals, bagels with peanut butter, whole grain toast, hot cereals with dried fruits and nuts, and fresh fruits or juices are some good choices.

## **Choose complex carbohydrates more often, instead of those that are refined.**

Whole grain breads, cereals and pastas are good examples, as well as fruits and vegetables.

## **Strive to eat a minimum of five fruits and vegetables a day.**

Fruits and vegetables are loaded with important vitamins and minerals. And although vitamins and minerals don't supply you with energy, they help you use foods more efficiently for fuel. And, fruits and vegetables are packed with powerful phytochemicals that keep your immune system strong and protect you from illness. Choose fresh or frozen most often. And, when buying canned fruits, avoid those with heavy or light syrups, instead pick those packed in water or in their own juice. If buying canned vegetables, choose low-sodium varieties to avoid excess salt, which can cause fluid retention.

## **Cut back on heavy foods, such as fatty meats and full-fat dairy products.**

Instead, choose lean meats such as round or loin cuts of beef, loin cuts of pork, water-packed tuna, egg whites, skinless chicken or turkey. And, remember to bake, broil, roast or grill, instead of pan frying. Or, better yet, try a few meatless meals a week using other proteins like soy, nuts or nut butters, or dry beans – they not only give you high quality protein, but they also offer you other health benefits. Choose non-fat or low-fat dairy foods.

## **Stay adequately hydrated.**

Remember to drink plenty of fluids every day – regardless of your workout plans. By the time you recognize thirst you are already dehydrated. Plan to drink eight to ten glasses a day on a regular basis. Rely on water as your primary source for fluid unless exercising strenuously, or for extended periods of time, such as 90 minutes or more. Remember jogging one mile burns off approximately 100 calories, and some sports drinks are loaded with calories. Be careful and read those labels.

## **Get plenty of rest.**

Rest helps your muscles recuperate and rejuvenate. You will enjoy workouts more and experience less fatigue with proper rest. Strive for at least eight hours of sleep a day.



### **Use supplements wisely.**

When workouts/distances increase to 90 minutes or longer, sports drinks or supplemental bars/gels may be useful in improving endurance. Endurance athletes should take in 30-60 grams of carbohydrates (120-240 calories) every hour. This amount can be obtained from either carbohydrate-rich foods (fruits, grains, liquid meals, and sports bars or gels) or Powerade. Try supplements of any kind while training to avoid unwanted gastrointestinal problems on race day!

### **Timing is everything.**

Avoid eating too close to workouts as stomach cramps or discomfort may result. Give yourself at least an hour after eating before exercising, and even longer after big meals.

### **Race Day!**

Make plans to consume a carbohydrate-rich meal one to four hours before the race (300-400 calories one hour before or 700-800 calories four hours before). Carbohydrate foods are rapidly digested to provide a readily available source of energy. Some good examples include bread products (adding jams or jellies increase carbohydrate content), cereals, fruits, non-fat or low fat yogurt, sports bars, liquid meals, fruit juices and one percent fat milk or soy milk. Limit high-fiber foods the day of race, such as bran, as they may lead to cramping.



# The Power of Recovery – The R4 System

The ability to perform optimally day after day is limited by your body's ability to recover from the stress of training. Many factors affect the rate and quality of recovery, including sleep and alcohol consumption, but nutrient timing and nutrient density are unquestionably the most important. To optimize recovery from training and competition follow the R4 System outlined below.

**RE**hydrate — Electrolytes and water

**RE**plenish — Muscle and liver glycogen

**RE**pair — Muscle tissue

**RE**duce — Oxidative stress

## REHYDRATE

### Drink, drink, drink!

- Dehydration is the number one cause of fatigue and sub-par performance.
- Drink half your bodyweight in ounces of water each day, excluding consumption during exercise.
- Drink four to eight ounces (water or Powerade and Louisville pure tap™ every 15-20 minutes during exercise
- Begin replacing lost fluids immediately post-exercise.
- Drink two cups (16 ounces) of fluid for every pound of bodyweight lost during your workout as soon as possible.
- Drink both Powerade and Louisville pure tap™ to rehydrate.
- Drink adequately to maintain abundant urine output that is clear in color.
- Avoid alcohol and caffeine, especially during the first 2 hours after exercise.
- Remember: If you're thirsty, you're dehydrated!

## REPLENISH

### Carb-up with high quality carbohydrates.

- Muscle and liver glycogen are the body's primary source of fuel during exercise, and may become a limiting factor during extended workouts.
- Muscle glycogen is made in the body from the carbohydrates you eat.
- Consuming fast-absorbing carbs during long workouts (bars and gels delay depletion; after an intense workout glycogen stores may be significantly depleted).
- Begin replenishing glycogen stores immediately after exercise – the first 2 hours is the most important time in the recovery process.
- Carbohydrates eaten during this two-hour "window" will expedite glycogen repletion and recovery.
- A fast-absorbing carbohydrate-rich supplement or snack that includes some protein should be consumed within the first 15-20 minutes after exercise, followed by a slow-absorbing carbohydrate-rich meal with lean protein and healthy fats within two hours.



## REPAIR

### Pack protein in every meal and snack.

- Protein plays a key role in recovery accelerating glycogen repletion, and repairing and rebuilding muscle tissue.
- Protein should be ingested along with carbohydrate in the first 15-20 minutes after exercise to stimulate repair and prevent further muscle breakdown (caused by the stress hormone cortisol).
- The Optimum Recovery Ratio for an endurance athlete is 4:1 (four grams of carbohydrate to one gram of protein) so look for products with this formulation (i.e., Endurox).
- Whey protein is the premier protein for recovery and enhanced immune system function. You can simply add a scoop of whey to Powerade for a solid recovery drink, or use low-fat chocolate milk.
- Keep in mind, too much protein (fat has a similar effect) taken in the first two hours after exercise slows gastric emptying thereby slowing rehydration and glycogen replenishment.

## REDUCE

### Eat your fruits and veggies; add some nuts, seeds, olives and fish.

- Exercise is stress, especially high volumes of long distance running.
- This stress is primarily caused by unstable molecules produced during oxygen metabolism, which results in inflammation, soreness, muscle trauma and delayed recovery.
- Reducing/minimizing oxidative stress is possible by ingesting antioxidants and healthy fats at the right times.
- Antioxidant nutrients include vitamins C and E, and phytonutrients found in specific fruits and vegetables.
- Consuming antioxidant-rich foods and drinks post-exercise has been shown to minimize oxidative stress, thereby accelerating recovery.
- Eating fruits and vegetables in the post-exercise meal should be a top priority, as well as taking a multi-vitamin rich in the antioxidant nutrients.
- New research suggests drinking specific antioxidant-rich drinks before exercise may protect cell structure during exercise, reducing cell damage and inflammation.
- This new concept in nutritional intervention known as PRECOVERY merits consideration. Intense exercise can compromise the immune system making you more susceptible to colds and infection. In addition to antioxidants, ensure that you are getting protein and healthy fat in your diet. Healthy fat is found in fish, nuts, seeds, olives, extra virgin olive oil, avocados and flax seed oil.

# Health and Performance Checklist

1. Do you eat breakfast seven days a week? .....  YES  NO
2. Do you eat foods from three different food groups at breakfast (ie: fruit, whole grain and protein)?.....  YES  NO
3. Do you eat two to three balanced meals at approximately the same time each day? .....  YES  NO
4. Do you eat a nutritious mid-morning and mid-afternoon snack that includes at least one serving of protein?.....  YES  NO
5. Do you eat at least two pieces of fresh fruit each day? .....  YES  NO
6. Do you eat at least three servings of fresh vegetables each day (one serving equals the size of your fist)?.....  YES  NO
7. Do you only choose high fiber breads and cereals? .....  YES  NO
8. Do you eat lean and/or low-fat protein at each meal (i.e., skim milk versus two percent milk)?.....  YES  NO
9. Do you limit your intake of saturated fat, typically found in meats, cheeses, dairy products, butter, egg yolks? .....  YES  NO
10. Do you eat at least two servings of "good fat" each day, typically found in nuts, seeds, extra virgin olive oil, olives, avocados and fish? .....  YES  NO
11. Do you limit your intake of processed and refined foods, typically foods made from white flour, foods high in sugar and sodium, packaged foods? .....  YES  NO
12. Do you eat and drink adequately to maintain your bodyweight? (This should be your goal unless you are on a fat loss or weight gain program.).....  YES  NO
13. Do you eat a post-workout/post-practice snack within 30 minutes? .....  YES  NO
14. Do you eat a post-workout/post-practice meal within two hours? .....  YES  NO
15. Do you drink half your bodyweight in ounces of water each day (not including fluid intake during exercise)? .....  YES  NO
16. Do you sleep at least seven to eight hours each night?.....  YES  NO
17. Do you go to bed at approximately the same time each night and get up at approximately the same time each morning (within 30 minutes of the same time)? .....  YES  NO
18. Do you take a multivitamin rich in the antioxidant nutrients (vitamins A, C, E, phytonutrients) each day?.....  YES  NO
19. Do you take 1,000 mg. of fish oil each day? .....  YES  NO
20. Do you limit or avoid alcohol? .....  YES  NO

**Total YES Score:** \_\_\_\_\_ /20

**Totals** \_\_\_\_\_

**16-20:** Performing like a champ! | **11-15:** Losing an edge! | **<10:** Missing out big time!

# Preventing Injuries

Preventing injuries during exercise can be accomplished by slowly increasing your workout time. Exercising properly may be the difference in finishing the race and having to visit a physician. It is most important for anyone beginning a work-out program to receive medical clearance from his or her physician.

After receiving medical clearance, the next step is to make sure the appropriate equipment is obtained. In running, that means the right shoe. A runner should have their feet and running patterns evaluated by a local running store. Depending on the individual's foot mechanics, the appropriate running shoe will provide proper support to the feet, helping to prevent injuries. Once these initial steps have been completed, let the running begin!

At the beginning of any exercise program, an individual should gradually increase the time and intensity of his or her workout, while endurance and aerobic capacity increase. Start with a warm-up of approximately five minutes, walking and slowly increasing the pace until the muscles are loose. Ideally, after the warm-up, a few minutes of stretching should take place to increase muscle flexibility and decrease the risk of injuries.

Once the run is completed, be sure to take advantage of cooling down your body. This will slowly decrease the heart rate and blood flow to your working muscles. After your cool down, it is appropriate to finish with stretching, allowing the lactic acid to decrease in the muscles and help reduce the risk of injury. The greater the flexibility of a muscle, the less likely an injury will occur.

## Injury prevention procedures:

- Obtain medical clearance before beginning an exercise program.
- Have the correct equipment for the exercise.
- Maintain proper warm-up and stretching routines.
- Enjoy appropriate workouts.
- Maintain proper cool down and stretching routines.

Last but not least, pay attention to what your body may be telling you. General muscle soreness after a workout is normal. Anything other than general soreness, the body is indicating other problems. Swelling and tenderness over a specific area may indicate you have an injury in need of medical attention. It is important to pay attention to any early warning signs, so it doesn't develop into a more serious injury.

# Preventing Injuries | Ice or Heat?

## Should you ice or heat an injury?

Ice bags and heating pads are among the most commonly used treatments in running related injuries. So which is the right one to use for your injury, ice or heat? And how long should the ice or heat treatments last? Read on for information about treatment of injuries with ice packs and heating pads.

### Heat Treatments

Heat treatments should be used for chronic conditions to help relax and loosen tissues, and to stimulate blood flow to the area. Use heat treatments for chronic conditions, such as overuse injuries, before participating in activities.

Do not use heat treatments after activity, and do not use heat after an acute injury. Heating tissues can be accomplished using a heating pad, or even a hot, wet towel. When using heat treatments, be very careful to use a moderate heat for a limited time to avoid burns. Never leave heating pads or towels on for extended periods of time, or while sleeping.

### Ice Treatments

Ice treatment is most commonly used for acute injuries. If you have a recent injury (within the last 48 hours) where swelling is a problem, you should be using ice treatment. Ice bags can help minimize swelling around the injury.

Ice bags should be used after injuries, such as when you suffer an ankle sprain. Applying an ice bag early and often for the first 48 hours will help minimize swelling. Decreasing swelling around an injury will help to control the pain.

Ice treatments may also be used for chronic conditions, such as overuse injuries in runners (shin splints, etc.) In this case, ice the injured area after activity to help control inflammation. Never ice a chronic injury before activity.

# Preventing Injuries | Ice or Heat?

## How to ice an injury — Time Required: 15 minutes

- 1. Get the ice on quickly.**  
Icing is most effective in the immediate period following an injury. The effect of icing diminishes significantly after about 48 hours.
- 2. Perform an “ice massage.”**  
Apply ice directly to the injury. Move the ice frequently, not allowing it to sit in one spot.
- 3. Don’t forget to elevate.**  
Keep the injured body part elevated above the heart while icing — this will further help reduce swelling.
- 4. Watch the clock.**  
Ice for 15-20 minutes, but never longer. You can cause further damage to the tissues, including frostbite, by icing for too long.
- 5. Allow time between treatments.**  
Allow the area to warm for at least 45 minutes to an hour before beginning the icing routine again.
- 6. Repeat as desired.**  
Ice as frequently as you wish, so long as the area is warm to touch and has normal sensation before repeating.

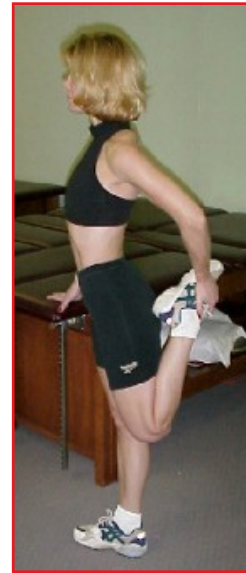
### Additional Ice Tips:

- **Ice Option 1 — Traditional**  
Use a Ziploc bag with ice cubes or crushed ice. Add a little water to the ice bag so it will conform to your body.
- **Ice Option 2 — Best**  
Keep paper cups filled with water in your freezer. Peel the top of the cup away and massage the ice-cup over the injury in a circular pattern allowing the ice to melt away.
- **Ice Option 3 — Creative**  
Use a bag of frozen peas or corn from the frozen goods section. This option provides a reusable treatment method that is also edible.

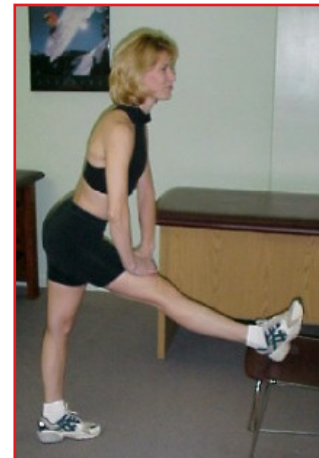
*Note — Do not let the ice just sit on the skin as this can cause frostbite.*

# Stretching

1. **Quadriceps Stretch:** The quadriceps are the muscles in the front of the thigh, important for lifting your knees and increasing your speed. It is the “quads” that often go at the end of marathons, causing runners to come shuffling across the finish line because they have a hard time lifting their feet off the ground. To do this exercise while standing, simply grab hold of a stationary object for balance with one hand and use the opposite hand to grasp the leg around the ankle, lifting it toward your buttocks. Keep your back straight and do not allow the knee to drift forward ahead of the stance leg. Hold each stretch for 10 seconds and repeat as many as 10 times for each leg.

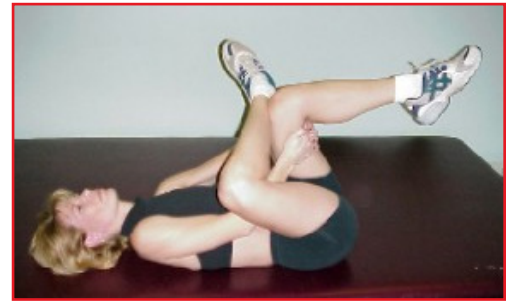


2. **Hamstring Stretch:** Most runners do this exercise by putting their foot on a waist-high stationary object (or a hurdle if at the track) and slowly leaning forward, reaching down the shin until they feel a stretch in the hamstring. The hamstring is the muscle that runs from just below the knee up into the buttocks. It's the muscle that lifts the lower leg and bends the knee after the quads have lifted your knees. Sprinters pull this muscle more than distance runners, but even straining your hamstring can limit your ability to run fast. The best way to do this exercise, however, is not with your foot on a stool, but rather while lying on your back. Lie on your back, keeping the back flat and your eyes focused upward. Grasp the back of one thigh with both your hands and (leg bent) pull that thigh into a 90-degree position versus the floor. Then slowly straighten your knee. After you've gotten used to doing this exercise, you can achieve a better stretch by pulling your thigh closer to your chest—but don't overdo it!





- 3. Piriformis Stretch:** The piriformis muscle is responsible for lateral rotation of the hip. It is particularly important to athletes who have to change direction, such as tennis players and running backs in football. Even though runners run straight ahead, keeping the piriformis muscle loose is important for overall flexibility. Lying on your back, cross your legs just as you might while sitting in a chair. Grasping the "under" leg with both hands, pull the knee toward your chest until you feel the stretch in your buttocks and hips.



- 4. Gastroc Stretch:** This push-off exercise is the one you most often see runners doing before races. Typically, they lean against a wall to stretch the calf muscles; however, they don't always do it right. The gastroc muscle, along with the soleus, is located in the back of the calf. It is the calf muscle that actually propels your leg across your grounded foot while running. Lean against a wall or other stationary object, both palms against the object. The leg you want to stretch is back, several feet from the wall, your heel firmly positioned on the floor. Your other leg is flexed about halfway between your back leg and the wall. Start with your back straight and gradually lunge forward until you feel the stretch in your calf. It is important to keep your back foot straight and angled 90 degrees from the wall.



- 5. Soleus Stretch:** This is the stretch that most runners forget. The soleus is the other major muscle in the calf, located in front of the gastroc. It is important for planting the foot on the ground before your push off. Position yourself similar to the gastroc stretch with back straight and palms against the wall. The difference is that you start in a "seated" position with your legs bent, your buttocks dropped. Gently lean into the wall until you feel the stretch in your lower calf.



# Heart Rate Training Zones

Heart rate training zones are calculated by taking into consideration your Maximum Heart Rate (MHR) and your Resting Heart Rate (RHR). Within each training zone, subtle physiological effects take place to enhance your fitness.

## The Energy Efficient or Recovery Zone — 60 to 70 percent

Training within this zone develops basic endurance and aerobic capacity. All easy recovery running should be completed at a maximum of 70 percent. Another advantage to running in this zone is that while you are happily fat burning you may lose weight. And you will allow your muscles to re-energize with glycogen, which has been expended during those faster paced workouts.

## The Aerobic Zone — 70 to 80 percent

Training in this zone will develop your cardiovascular system. The body's ability to transport oxygen to, and carbon dioxide away from, the working muscles can be developed and improved. As you become fitter and stronger from training in this zone, it will be possible to run some of your long weekend runs at up to 75 percent, so getting the benefits of some fat burning and improved aerobic capacity.

## The Anaerobic Zone — 80 to 90 percent

Training in this zone will develop your lactic acid system. In this zone, your individual anaerobic threshold (AT) is found – sometimes referred to the point of deflection (POD). During these heart rates, the amount of fat being utilized as the main source of energy is greatly reduced and glycogen stored in the muscle is predominantly used. One of the by-products of burning this glycogen is lactic acid. There is a point at which the body can no longer remove the lactic acid from the working muscles quickly enough. This is your AT. Through correct training, it is possible to delay the AT by increasing your ability to deal with the lactic acid for a longer period of time or by pushing the AT higher.

## The Red Line Zone — 90 to 100 percent

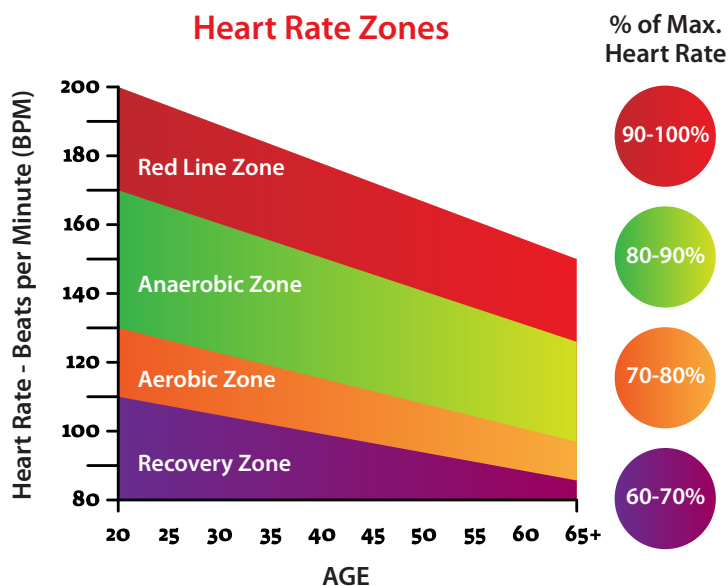
Training in this zone will only be possible for short periods. It effectively trains your fast twitch muscle fibers and helps to develop speed. This zone is reserved for interval running and only the very fit are able to train effectively within this zone.

## Resting Heart Rate

To determine your resting heart rate (RHR) is very easy. Find somewhere nice and quiet, lie down and relax. Position a watch or clock where you can clearly see it while lying down. After 20 minutes, determine your resting pulse rate (beats/min). Use this value as your RHR.

If you have a heart rate monitor, put it on before you lie down. After the 20 minutes check the recordings and identify the lowest value achieved. Use this value as your RHR.

The heart is a muscle so with regular exercise it will become larger and more efficient as a pump. As a result, you will find your RHR gets lower so you will want to check your RHR on a regular basis (e.g. monthly).



### Calculation of a Zone Value

The calculation of a zone value, X percent, is performed in the following way:

- Subtract your RHR from your MHR, which gives your working heart rate (WHR)
- Calculate the required X percent on the WHR, which gives “Z”
- Add “Z” and your RHR together to give the final value

Example: The athlete’s MHR is 180 and his/her RHR is 60, determine the 70 percent value.

- $MHR - RHR = 180 - 60 = 120$
- $70 \text{ percent of } 120 = 84$
- $84 + RHR = 84 + 60 = 144$

### Heart rate variations for a given intensity

A reduction in heart rate for a given intensity is usually due to an improvement in fitness but a number of other factors might explain why heart rates can vary for a given intensity:

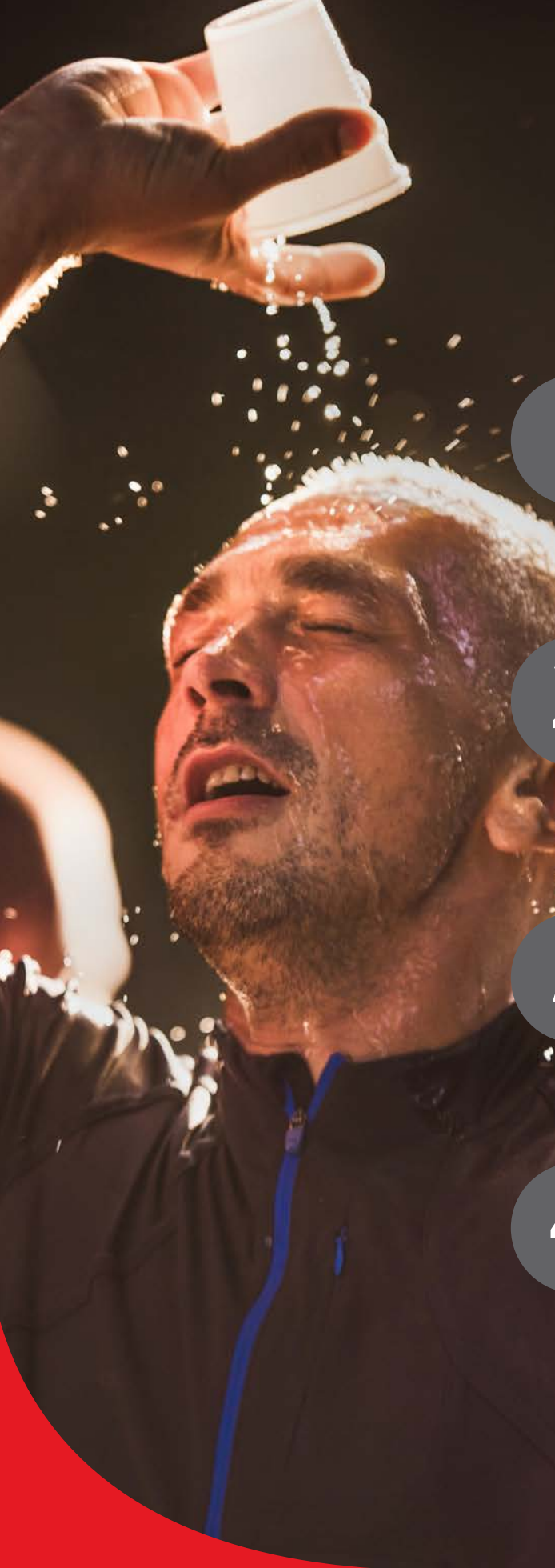
- Dehydration can increase the heart rate by up to 7.5 percent
- Heat and humidity can increase the heart rate by 10 beats/minute
- Altitude can increase the heart rate by 10 to 20 percent, even when acclimated
- Biological variation can mean the heart rate varies from day to day by two to four beats per minute

### Injury Care

Don’t let an injury keep you out of the game. Turn to UofL Health – Sports Medicine for the area’s leading sports medicine physicians and orthopedics, advanced diagnostics, UofL Health – Frazier Rehab Institute, and convenient urgent care and emergency care locations. Professional, collegiate, and high school athletes, weekend warriors and those who have an “athletic mindset” can take advantage of the expertise of our specialized care. Our board-certified sports medicine physicians treat a wide variety of injuries and illnesses. They know how to get you safely back to optimal fitness and ready to compete.

### For More Information

Unsure where to start? Call 502-63-SPORT (77678) and talk with a member of the UofL Health team for more information, or visit our website at [UofLHealth.org/Sports-Medicine](http://UofLHealth.org/Sports-Medicine).



## Four Training Universals

### Rest

1 Rest means no running. Give your muscles and synapses some serious R&R so all systems are primed for the next workout. Better two quality days and two of total rest than four days of mediocrity resulting from lingering fatigue. Rest days give you a mental break as well, so you come back refreshed.

### Easy Runs

2 Easy Runs mean totally comfortable and controlled. If you're running with someone else, you should be able to easily converse. You'll likely feel as if you could go faster. Don't. Here's some incentive to take it easy: You'll still burn 100 calories every mile you run, no matter how slow you go.

### Long Runs

3 Long Runs are any steady runs at or longer than race distance designed to enhance endurance, which enables you to run longer and longer and feel strong doing it. A great long-run tip: Find a weekly training partner for this one. You'll have time to talk about anything that comes up.

### Speed Work

4 Speed Work means bursts of running shorter than race distance, some at your race goal pace, some faster. This increases cardiac strength, biomechanical efficiency, better running economy and the psychological toughness that racing demands. Still, you want to keep it fun.

# Beginner Half Marathon Training

## Profile

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You've run for at least a year, but you're still a racing neophyte. You can run five miles at a time without distress, average 15 to 20 miles a week, and have finished a 5K, perhaps even a 10K. Now you want to go longer, though not yet to a marathon, and your race time is less important to you than finishing.

## Schedule Tips

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As a beginner, you're going to do two things. First, incrementally increase your weekly mileage and long run, which translates into more endurance. You'll need this in order to run for more than two hours. Second, you'll do some gradually longer bits of running at faster than your normal pace to build up your stamina and keep you strong over the last third of the race.

## Aerobic Intervals (AI)

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You push the pace. But just a little. Find a tempo that feels somewhere between comfortable and "Hey, I'm workin' a little here." Don't run this too hard. Trying to add too much intensity while you're also increasing mileage spells I-N-J-U-R-Y. When you finish the timed AI, jog very slowly until your breathing returns to normal, then work back into your regular pace. On all other days, just run your assigned miles.

## Cross-Train

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On cross-training days, you participate in some other sport for 30-60 minutes. It could be walking, biking, swimming or some combination of all three. The goal of cross-training is to relax your muscles before or after your long runs. Strength training is another cross-training option. If you already lift, you can continue to do so as per your regular schedule,

but it's usually not a good idea to lift before you run. After, or on another day of the week, usually works better. Do not cross-train too hard or you'll compromise your ability to do the long runs.

## Gentle Pickups (GP)

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At the end of your run, walk for several minutes, then slowly increase your leg turnover on a flat stretch for 100 meters — the straightaway on a track — up to the point where you start to breathe hard. Hold it there for 10 to 20 meters, then gradually slow down. Walk to full recovery before you start the next one. The purpose of both AI and GP is to improve your stamina, leg speed, running efficiency and to make your normal pace feel more comfortable. What's more, this kind of up-tempo running adds variety to your training. Always a good thing.

## Race Day Rules

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Start at the back of the pack, and run more slowly than you think you should for the first few miles. Keep it reined in. Stay completely, totally comfortable. Work your way into a controlled rhythm as the race proceeds, and stop at every aid station. Don't slow down, stop. Drink plenty, eat some, rest a bit (but no more than 30 seconds), and stretch your legs if you need to. Then get going again. With a well-rested body from your taper week, and thanks to race-day adrenaline and the energy of the field, you'll get through the last three miles fine, perhaps even enjoy them.

# Intermediate Half Marathon Training

## Profile

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You have a solid aerobic base. You have been running consistently for several years, tried various kinds of speed training, average 25 to 30 miles a week, and may even have finished a half-marathon. But now you want to race a half. That is, you have a specific finishing time in mind, and you're willing to train hard to achieve it.

## Schedule Tips

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"Intermediate runners have enough experience and strength to support some faster running — but within the context of increased weekly mileage and an adequate long run, which remains the key to improvement at this level," says Anaerobic Management coach Jon Sinclair (anaerobic.net).

"So be careful when you add speed, because what we're after here is greater endurance, the ability to run longer at race pace." That's the crux of the Intermediate plan. To that end, Sinclair also suggests "adding some tempo to at least some of the long runs when they're maybe going just a bit faster over the final 10 to 15 minutes." That's a bit faster, okay? No bug-eyed straining.

"I would also include some interval miles at faster than projected race pace," Sinclair adds "Interval tempo here should be challenging, but not too crazy. And the recovery should be enough to support the effort — down to a 120 heart rate, 400-meter jog, whatever it takes. If the rest isn't long enough, you can't maintain the quality."

## Pace Intervals (PI)

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Relatively lengthy repetitions at your goal half-marathon per-mile pace to build endurance and develop pace judgment. Note: All numbers in parentheses above denote distance of recovery jog.

## Cruise Intervals (CI)

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Run at 10K race pace to promote stamina and the ability to run strong when tired. For 10:00-per-mile half-marathon pace (2:11:06), run 7:07 (1200), 4:45 (800); for 9:00 pace (1:57:59), run 6:24 (1200), 4:16 (800); for 8:00 pace (1:44:52), run 5:42 (1200), 3:48 (800).

## Speed Intervals (SI)

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Run at 5K race pace to promote relaxed speed and a sense of comfort at your considerably slower half-marathon pace. For 10:00 half-marathon pace, run 4:30 (800), 2:15 (400), 1:07 (200); for 9:00 half-marathon pace, run 4:04 (800), 2:02 (400), 1:01 (200); for 8:00 half-marathon pace, run 3:37 (800), 1:48 (400), 0:54 (200).

## Strides (S)

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Over 100 meters, gradually accelerate to 90 percent of all-out, hold it for five seconds, then decelerate. Walk to full recovery after each.

## Total Uphill Time (TUT)

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Work the uphill sections during your run, at something near a strong 10K effort in the total time called for.

## Race Day Rules

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To warm up, jog just 800 meters, and then do a few fast strides. That's it. Keep your glycogen tanks topped off and your legs fresh. Divide your half like this: 10-mile run, 5K race. Run the first mile just slower than goal pace, then work into a rhythm and run just below your lactate threshold level so you don't implode an hour out. And draft off other runners to conserve energy. Do all these things, and you'll be fine.

# Advanced Marathon Training

## Profile

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You've run and raced for many years. You've finished just about every distance — half-marathon and perhaps full marathons included — and have averaged 35-plus miles a week for at least the last six months. You've run some PRs at shorter distances, and now you want to push yourself without putting in the major mileage a marathon demands. And you're willing, even eager, to increase the intensity of your speed work.

## Schedule Tips

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"A primary goal at the advanced level is increased weekly mileage, and make sure it includes an adequate long run," advises Coach Sinclair.

"Everyone understands the need to do a long run for a marathon, but too many fail to see the need for it in training for a half. Don't do a ton of them, but doing one or two really helps."

And there's another thing, too: At this point in your running life, "long run" doesn't mean just more time on your feet. It means sticking some intensity in there. Focusing less on adding length and more on adding quality is vital to a good racing effort over a long distance like the half. We have a few patterns for you to play with, such as LRSI and SRFF. We also have you doing increasingly longer runs at your half-marathon pace to teach your body what it feels like.

## Cross-Train

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Normally cross-training is not prescribed for advanced runners. That's because you're usually more focused on pure running than Novice or Intermediate runners. But if you find that cross-training helps you prevent injuries, or if you enjoy it, feel free to substitute cross-training on one or more of the easy days. Notice the word substitute. Usually it's not a good idea to add cross-training,

particularly hard cross-training, to an existing schedule under the mistaken belief that it will make you stronger. It may actually cause you to over-train, which can have a negative effect on performance, because you never get a chance to rest. What form of cross-training works best? It could be swimming, cycling, walking, cross-country skiing, snowshoeing or even some combination that could include strength training.

Lastly, to run a PR half, you must be able — and willing — to maintain a fast-for-you pace in the face of increasing fatigue. So you need to train to run goal pace after having already done enough running to tire yourself. This is the purpose of our Fatigue Fighter sessions—short, sub race-pace reps followed by an extended run at your half-marathon goal speed to simulate the demands of the race itself.

## Pace Intervals (PI)

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For what and why, see the Intermediate schedule.

## Cruise Intervals (CI)

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For what and why and for 8:00-per-mile half-marathon goal pace, see the Intermediate schedule; for 7:00 half-marathon goal pace (1:31:46), run 6:40 for 1-mile, 5:00 (1200), 3:20 (800); for 6:00 goal pace (1:18:39), run 5:34 for 1-mile, 4:10 (1200), 2:47 (800).

## Speed Intervals (SI)

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For what and why, see the Intermediate schedule. If your half-marathon goal pace is 8:00 per mile (1:44:52), run 3:37 (800), 1:48 (400), 0:54 (200); for 7:00 half-marathon pace, run 3:09 (800), 1:35 (400), 0:48 (200); for 6:00 half pace, run 2:42 (800), 1:22 (400), 0:41 (200).

## Advanced Marathon Training *continued*

### Strides (S)

See Intermediate schedule.

### Fatigue Fighter Intervals (FFI)

FF Intervals combine Speed and Pace Intervals nearly back-to-back-to-back (very short recoveries) to work on maintaining pace and staying relaxed as you gradually tire. Yes, they're challenging. Jog five to seven minutes easy between sets.

### Long Run (LR)

This means a moderate pace (roughly 60 to 75 seconds slower than your half-marathon goal pace). Long Run Stamina (LRS) means to run three to six miles at half-marathon goal pace in the middle third of the run. Long Run Fartlek (LRF) means to alternate one minute at 10K pace with one-minute jogs in the middle third of the run. Long Run Fast Finish (LRFF) means to run the final 15 minutes at 10K pace.





# Training Calendar

JULY						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12 Urban Bourbon Training Program Kickoff	13	14	15	16
17 Training Week 1	18	19	20 N: 2 Miles I: 3 Miles A: 5 Miles	21 N: 4 Miles I: 5 Miles A: 6 Miles	22 REST/ CrossTrain	23 N: 4 Miles I: 6 Miles A: 7 Miles
24 N: Rest/Cross I: Rest/Cross A: 5 Miles	25 N: 4 Miles I: 4 Miles A: Fartlek (6 mi)	26 N: Rest/Cross I: Fartlek (4 mi) A: 5 Miles	27 N: 5 Miles I: 3 Miles A: 5 Miles	28 N: 3 Miles I: 4 Miles A: 5x1600m	29 REST/ CrossTrain	30 N: 5 Miles I: 7 Miles A: 8 Miles
31 N: Rest/Cross I: Rest/Cross A: 5 Miles						

## NOTES:

- On workout days, be sure to warm up and cool down to help loosen up muscles and prevent injuries.
- **Tempo:** Add 30-40 seconds to your current 5K pace, and 6 on a 1 to 10 scale of perceived effort.
- **Intermediate Fartiek:** Fartiek segments of 30 seconds, 1 or 2 minutes followed by equal or double rest segments.
- **Advanced Fartiek:** Fartiek segments of 1, 2 or 3 minutes followed up by equal rest segments.
- **Rep Workouts:** Run reps at current 5K pace or perceived effort of B on a scale of 1 to 10.
- **Rep Workouts:** Rest between reps - subtract 1:30 or more from your goal rep pace, i.e., 5 minute 1200/3:30 rest.
- **200's/400's:** Run at 1 mile pace or faster, perceived effort 9 out of 10, rest equal to rep time.

# Training Calendar

AUGUST						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	<b>1</b> N: 3 Miles I: 4 Miles A: 5 Miles	<b>2</b> N: Rest I: 4x1200m A: 6x1200m	<b>3</b> N: 4 Miles I: 4 Miles A: 5 Miles	<b>4</b> N: 4 Miles I: 4 Miles A: 5 Miles	<b>5</b> REST/ CrossTrain	<b>6</b> N: 6 Miles I: 8 Miles A: 9 Miles
<b>7</b> N: Rest/Cross I: Rest/Cross A: 5 Miles	<b>8</b> N: 3 Miles I: 4 Miles A: 6x800m	<b>9</b> N: Rest/Cross I: 5x800m A: 5 Miles	<b>10</b> N: 3 Miles I: 4 Miles A: 5 Miles	<b>11</b> N: 3 Miles I: 5 Miles A: Fartlek (6 mi)	<b>12</b> REST/ CrossTrain	<b>13</b> N: 4 Miles I: 5 Miles A: 7 Miles
<b>14</b> N: Rest/Cross I: Rest/Cross A: 5 Miles	<b>15</b> N: 4 Miles I: 4 Miles A: 5 Miles	<b>16</b> N: Rest/Cross I: Fartlek (4 mi) A: Fartlek (6 mi)	<b>17</b> N: 4 Miles I: 4 Miles A: 5 Miles	<b>18</b> N: 2 Miles I: 3 Miles A: 6 Miles	<b>19</b> REST/ CrossTrain	<b>20</b> N: 6 Miles I: 8 Miles A: 10 Miles
<b>21</b> N: Rest/Cross I: Rest/Cross A: 5 Miles	<b>22</b> N: 4 Miles I: 4 Miles A: Fartlek (6 mi)	<b>23</b> N: Rest/Cross I: Fartlek (4 mi) A: 5 Miles	<b>24</b> N: 5 Miles I: 3 Miles A: 5 Miles	<b>25</b> N: 3 Miles I: 4 Miles A: 5x1600m	<b>26</b> REST/ CrossTrain	<b>27</b> N: 7 Miles I: 9 Miles A: 11 Miles
<b>28</b> N: 9 Miles I: 9 Miles A: 10 Miles	<b>29</b> N: 3 Miles I: 4 Miles A: 6 Miles	<b>30</b> N: Rest I: 4x1200m A: 6x1200m	<b>31</b> N: 4 Miles I: 4 Miles A: 5 Miles			

## NOTES:

- On workout days, be sure to warm up and cool down to help loosen up muscles and prevent injuries.
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- **200's/400's:** Run at 1 mile pace or faster, perceived effort 9 out of 10, rest equal to rep time.

# Training Calendar

SEPTEMBER						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				<b>1</b> N: 4 Miles I: 4 Miles A: 5 Miles	<b>2</b> REST/ CrossTrain	<b>3</b> N: 8 Miles I: 10 Miles A: 12 Miles
<b>4</b> N: Rest/Cross I: Rest/Cross A: 5 Miles	<b>5</b> N: 3 Miles I: 4 Miles A: 6x800m	<b>6</b> N: Rest/Cross I: 5x800m A: 5 Miles	<b>7</b> N: 5 Miles I: 4 Miles A: 5 Miles	<b>8</b> N: 3 Miles I: 5 Miles A: Fartlek (6 mi)	<b>9</b> REST/ CrossTrain	<b>10</b> N: 6 Miles I: 7 Miles A: 10 Miles
<b>11</b> N: Rest/Cross I: Rest/Cross A: 5 Miles	<b>12</b> N: 4 Miles I: 4 Miles A: 5 Miles	<b>13</b> N: Rest I: 3-5 Mile Tempo A: 5-6 Mile Tempo	<b>14</b> N: 5 Miles I: 4 Miles A: 5 Miles	<b>15</b> N: 4 Miles I: 5 Miles A: 5 Miles	<b>16</b> REST/ CrossTrain	<b>17</b> N: 9 Miles I: 10 Miles A: 13 Miles
<b>18</b> N: Rest/Cross I: Rest/Cross A: 5 Miles	<b>19</b> N: 5 Miles I: 5 Miles A: 5 Miles	<b>20</b> N: Rest I: 200's/400's A: 200's/400's	<b>21</b> N: 4 Miles I: 4 Miles A: 4 Miles	<b>22</b> N: 3 Miles I: 4 Miles A: 4 Miles	<b>23</b> REST/ CrossTrain	<b>24</b> N: 10 Miles I: 11 Miles A: 11 Miles
<b>25</b> N: Rest/Cross I: Rest/Cross A: 6 Miles	<b>26</b> N: 4 Miles I: 4 Miles A: 4 Miles	<b>27</b> N: Rest I: 3 Miles A: 4 Miles	<b>28</b> N: 2 Miles I: 3 Miles A: 4 Miles	<b>29</b> N: 5 Miles I: 3 Miles A: 4 Miles	<b>30</b> N: Rest I: 2 Miles A: 3 Miles	

## NOTES:

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- **200's/400's:** Run at 1 mile pace or faster, perceived effort 9 out of 10, rest equal to rep time.

# Training Calendar

OCTOBER						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						<b>1</b> N: 7 Miles I: 7 Miles A: 7 Miles
<b>2</b> N: Rest/Cross I: Rest/Cross A: 2 Miles	<b>3</b> N: 4 Miles I: 4 Miles A: 5 Miles	<b>4</b> N: Rest I: 3 Miles A: 4 Miles	<b>5</b> N: 2 Miles I: 3 Miles A: 4 Miles	<b>6</b> N: 15 Mins. I: 3 Miles A: 4 Miles	<b>7</b> N: Rest I: 2 Miles A: 3 Miles	<b>8</b> <b>Urban Bourbon Half Marathon</b>
<b>9</b> *Make sure to stretch and walk to aid recovery!*	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23/30</b>	<b>24/31</b>					

## NOTES:

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- **200's/400's:** Run at 1 mile pace or faster, perceived effort 9 out of 10, rest equal to rep time.

# Training Log

Keep track of your training by copying and completing this log each week.

Month: \_\_\_\_\_ Year: \_\_\_\_\_ Weight: \_\_\_\_\_ lbs.

Day	Activity	Type	Route	Weather	Distance	Time	Personal	Notes
Monday	Training	Tempo Pace	Outdoor:	Temp:			Sleep:	
	Race	Interval Run	_____	Other:	mi.	: :	Mood:	
	:	CrossTrain	Long Hills	Treadmill				
Tuesday	Training	Tempo Pace	Outdoor:	Temp:			Sleep:	
	Race	Interval Run	_____	Other:	mi.	: :	Mood:	
	:	CrossTrain	Long Hills	Treadmill				
Wednesday	Training	Tempo Pace	Outdoor:	Temp:			Sleep:	
	Race	Interval Run	_____	Other:	mi.	: :	Mood:	
	:	CrossTrain	Long Hills	Treadmill				
Thursday	Training	Tempo Pace	Outdoor:	Temp:			Sleep:	
	Race	Interval Run	_____	Other:	mi.	: :	Mood:	
	:	CrossTrain	Long Hills	Treadmill				
Friday	Training	Tempo Pace	Outdoor:	Temp:			Sleep:	
	Race	Interval Run	_____	Other:	mi.	: :	Mood:	
	:	CrossTrain	Long Hills	Treadmill				
Saturday	Training	Tempo Pace	Outdoor:	Temp:			Sleep:	
	Race	Interval Run	_____	Other:	mi.	: :	Mood:	
	:	CrossTrain	Long Hills	Treadmill				
Sunday	Training	Tempo Pace	Outdoor:	Temp:			Sleep:	
	Race	Interval Run	_____	Other:	mi.	: :	Mood:	
	:	CrossTrain	Long Hills	Treadmill				

**Week Total** \_\_\_\_\_

**(Previous YTD Total) +** \_\_\_\_\_

**YTD Total** \_\_\_\_\_



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P: 502-560-8300 • F: 502-560-8480

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F: 502-957-1257

**UofL Health – Frazier Rehab Institute  
Jeffersontown**  
9553 Taylorsville Road  
Jeffersontown, KY 40299  
P: 502-966-4466  
F: 502-964-3271

**UofL Health – Frazier Rehab Institute  
Mary & Elizabeth Hospital**  
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Louisville, KY 40215  
P: 502-363-7800  
F: 502-363-7848

**UofL Health – Frazier Rehab Institute  
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F: 502-259-6605

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Newburg**  
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Louisville, KY 40218  
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F: 502-458-2158

**UofL Health – Frazier Rehab Institute  
Northeast**  
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F: 502-210-4505

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Sports Medicine Center**  
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Louisville, KY 40208  
P: 502-637-9313  
F: 502-635-6317

**UofL Health – Frazier Rehab Institute  
Shelbyville Hospital**  
727 Hospital Drive  
Shelbyville, KY 40065  
P: 502-647-4285  
F: 502-647-4288

**UofL Health – Frazier Rehab Institute  
Southwest**  
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Louisville, KY 40258  
P: 502-937-2288  
F: 502-933-8848

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F: 502-560-8480

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Springhurst**  
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