MARATHON TRAINING ACADEMY

OFFICIAL GUIDE TO RUNNING YOUR FIRST MARATHON

100% Pure Empowerment to Conquer the Distance even on a Busy Schedule

BY ANGIE SPENCER
Marathoner, RN, Podcaster
Dedication

This book would never have become a reality without the assistance and support of so many people. Thank you to my husband Trevor who has great vision and helped push me out of my comfort zone. My mother has assisted in so many practical ways. Thanks for watching the kids Grandma D! My sister Autum has discovered the joy of running and it has been wonderful to experience this journey with her. To all the amazing people in the MTA community, your support and running stories keep me inspired. Most importantly, I am indebted to God, who loves me unconditionally and has given me so many wonderful gifts—one of them being the gift of running.
Forward

After a three-year battle with Lyme Disease, I wanted to raise awareness about the disease by running the New York City Marathon in 2010. The only problem was, the furthest I had ever run was 10 miles.

In order to succeed I needed information - but not just any information, I needed the BEST information I could find. My online search took me to Marathon Training Academy and I immediately decided this was the place for me.

The information provided on the excellent blog and podcast produced by Angie and her husband Trevor took me from being a novice runner to an experienced marathon runner. They taught me how to find the right mental motivation to run my first marathon, strategies for conquering the long run, and practical tips on hydration, nutrition, and injury prevention.

Angie and Trevor have developed an informational experience with a large online community of people who are just like me – runners who want to achieve their running goals and need the practical information necessary to do so. At times it was like having a personal trainer as Angie answers ALL emails she receives.

I finished the New York City Marathon in 4 hours and 14 minutes! I would not have had that successful outcome without the information, advice, and support Marathon Training Academy gave me. I can’t thank them and the community they created enough!

Angela Coulombe

www.lymerunner.com
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Chapter One

This is the story of how a busy mother of two with no athletic talent set out to train for a marathon, endured besetting injury, learned the right way to train, and ran 26.2 miles without stopping.

My Running Story

I have never been an athlete. I didn’t play team sports and was more comfortable with my nose in a book. How did I go from an introverted teenager to a confident marathoner? This is my journey. . .

I started running sporadically in high school mostly because I wanted to lose weight (like most girls). One summer between semesters I had the goal of running 10 miles. Several mornings a week I walked down to the high school track to build up my miles. I remember the 40 laps it took to run 10 miles. So much monotony and yet so much triumph.

The glow of those 10 miles carried me through several years of running but I never worked back up to that level for many years. Soon I had graduated nursing school, started working full time, got married, had two kids, and moved across the country.
All those years I exercised regularly but never took my running to the next level. Now I was in a new state and didn’t know many people. It felt like I needed something to give myself a purpose.

On a whim I ran a local 5K and although it was painful I enjoyed the competition. I started training for another 5K and suddenly set my sight on something bigger. I had been subscribing to Runner’s World Magazine for a couple months and found the stories about normal people who conquered great distances very inspiring. I knew I had to run a marathon.

I didn’t know any other runners, especially anyone who’d completed a marathon. Despite the lack of group support I went online and read everything I could about training for a marathon. I researched races and settled on the Country Music Marathon in Nashville, TN in April 2008. My husband was supportive, but because of our limited budget my Mom “sponsored” me for the race.

I printed off a training program from the internet and started training seriously in December. Looking back it was rough to run outside through the winter. I didn’t have a gym membership or access to a treadmill. I ran 5-6 days a week in wind, rain, snow, and ice. It was rough some mornings, but also exhilarating. I was just an ordinary wife and mother, but I was making my dream come true.

Then I began to be plagued by injuries. Lower back spasms left me so sore I could not get in and out of the car without help. Thankfully we found an affordable chiropractor who got me all fixed up. I also struggled through shin splints and sharp nagging knee pain. But I knew that I would finish that race even if I had to limp the whole way.

When race day finally arrived it was drizzly and overcast but I didn’t care. The energy around me was palpable. Looking in front of me was a sea of runners, looking behind me stretched runners as far as the eye could see. We were all there for a united purpose. We had each worked so hard to get there.

The gun went off and we started shuffling along. It was a couple miles before I was able to find my stride in the midst of so many runners. I was used to running alone and being surrounded by other people made the miles slip away.
At mile 13 the half-marathoners veered off and I found myself thinking that I still had half way to go. At mile 20 I was in virgin territory and the heat and humidity was beginning to wear me down. But I never seriously considered stopping and walking. Then suddenly there was the finish line and I surged to finish strong. My finishing time was 4:10:15.

No matter how many races I run in my lifetime, I don’t think I’ll forget that first marathon. Conquering that distance definitely changed my life. I have learned how to train smarter since that time and minimize soreness and injury. I also found that the most important ingredient to finishing a marathon is confidence.

The most recent marathon I ran I set a personal goal of finishing in less than four hours. I trained smarter, visualized success, and finished in 3:59:03.

Thanks for reading my story. . .

Now I would love to hear yours.

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Send me an email. Tell me your running story and how this ebook has helped you. I promise to send you a personal reply. And yes it will really be from me not an automated response!

angie@marathontrainingacademy.com
Chapter Two

The Mystique of the Marathon

According to history, the marathon has been around for 2,500 years. The Greek runner Pheidippidies ran from Marathon, Greece to Athens, Greece to tell the Athenians of the Greek victory over the Persian army. He announced, "We won the battle," and then fell over dead. From this auspicious start, an Olympic event was made to honor that warrior.

The first modern Olympic marathon race was in 1896 but the official distance of 42,195 meters or 26 miles 385 yards wasn't standardized until 1921. In 1896 the event was won by Greek runner Spiros Louis, a water carrier, in 2:58:50. The Olympics didn't start a women's marathon until 1984 and the first event was won by Joan Benoit with a time of 2:24:52.

The Boston Marathon

The Boston Marathon was started in 1897 and it was a men's only race. It was thought that women were not capable of endurance events and were therefore
banned from the race. In 1966 Roberta Gibb ran Boston unofficially in 3:20. Katherine Switzer entered the race as K. Switzer in 1967 and was almost ejected. Women were officially allowed in 1972. The Boston Marathon requires a qualifying time for all non-professional runners.

The five largest and most prestigious races are Boston, New York City, Chicago, London, and Berlin. Other top ten worldwide marathons include Amsterdam, Honolulu, Paris, Rotterdam, and Stockholm. Most marathoners don't run to win the race. Rather they run for personal payoffs and in the process change their lives. The current world record for men is held by Haile Gebrselassie of Ethiopia with a time of 2:03:59 which would be a pace of 4:44 minutes/mile (12.6 mph). The woman's record is held by Paula Radcliffe of Great Britain with a time of 2:15:25.

- Wally Herman ran a marathon in 99 countries
- Larry Macon (64 years old) ran 105 marathons in 2008
- In 2009 Ricardo Abad Martinez of Spain ran 150 marathons in 150 days
- As of 2007 Horst Preisler of Germany had run 1214 marathons and 347 ultra marathons in his life.

In the US a popular club is the 50 state club where runners run a marathon in all 50 states plus Washington, DC. Over 300 people are members of the 50 state club. Another goal for some runners is to run a marathon on all 7 continents. At least 31 people have completed this challenge.

Celebrities and Marathons

It seems like every time you hear the news lately there is a report of a celebrity running a marathon. Somehow the marathon has become the new way to challenge yourself personally and change your life. Whether you blend in with the crowd or are on the cover of magazines the marathon is an amazing achievement.
Some famous people who have completed marathons include athletes Lance Armstrong who finished in 2:59:36 and said that the marathon was "without a doubt the hardest physical thing I have ever done"; Actors Anthony Edwards (3:55:40), Will Ferrell (3:56:12), Edward Norton (3:48:01), Katie Holmes (5:29:58), Mario Lopez (5:41:41), and Freddie Prince Jr. (5:50:49). TV personalities Lisa Ling (4:34:18), Natalie Morales (3:31:02), and Oprah Winfrey (4:29:20) have also gone the distance. Some musician marathoners include David Lee Roth (6:04:43), Alanis Morissette (4:28:45), and P. Diddy (4:14:54). Politicians that have taken the marathon challenge include Senator John Edwards (3:30:18), Al Gore (4:58:25), Sarah Palin (3:59:36), and George W. Bush (3:44:52).

**Training Programs**

The average marathon training program is 4-6 months and involves a gradual buildup of miles in the long run. The long run is the most important aspect of training and recreational runners usually try to achieve a long run of 20 miles before their race and average around 30-40 miles/week. Elite runners often log 100+miles/week, often logging twice a day running sessions.

In 2005 the average finishing time for a man was 4:32:08 and 5:06:08 for women. The average woman burns 2,880 calories while running a marathon and it takes her 51,214 steps to complete the race. Most runners will go through an average of 2 pairs of shoes while training for a marathon. In 2007 there were 1 billion pairs of running shoes sold.

National Public Radio reported that eight people will die running marathons per year in the United States. Because around 500,000 will run a marathon every year the death rate ends up being 0.00002%. In fact, it is more likely that you will be murdered than die while running a marathon.
The Reason for the Mystique

A Running Times article from 2001 theorizes why the marathon is so magnetic - because it appeals to every aspect of our being. Let me summarize.

First, the physical challenge is of that magnitude that we realize it won't be easy. In fact, we may be getting in over our heads and success is not guaranteed. The adrenalin created from taking on the marathon is truly addicting.

Secondly, the marathon is an intellectual puzzle where we have to break out of our routine and form new ones. The training presents a mental puzzle which must be thoroughly planned out. Running Times argues that marathons favor thinkers and planners.

Thirdly is the emotional inspiration we derive from the marathon. It can inspire, transform, and can break us out of our mundane routine. Sometimes in life we have had to give up our dreams. Running a marathon is a way of grabbing onto our dreams and making positive things happen for us.

Fourthly, there is also a spiritual test involved where our human will is challenged. We are required to strive, sacrifice, and suffer to prove ourselves and fulfill our dreams. As we train we become masters of our inner athlete. The long runs especially give time for introspection and self mastery.

American philosopher William James says, “Self-esteem is based on success and expectations. Increased joy comes from exceeding what we thought we could accomplish.”

We need to set goals that are big enough to cause doubt, but result in great joy when they are achieved. Preparation leads to confidence which leads to success. Letting go of fear causes us to relax and succeed. Trust your training.

In the next chapter I will give you a motivational kick in the pants. I will help you work through any excuses or fears that are holding you back from reaching your marathon potential.
Chapter Three

Unleashing Your Marathon Potential

Why do you want to run a marathon? Why do you want to take this challenge on now? What is the payoff factor? Something has brought you to the place where you want to run a marathon and change your life. Now it is time to use your most powerful muscle to propel you forward - YOUR MIND.

Think back to when you first started running. What were those first months like? Yeah, they were tough. Sometimes you wondered why you even pushed yourself to run at all. But, you kept going because you found a payoff.

You probably started noticing positive physical changes like weight loss, better posture, and more energy. You also noticed more confidence and better self-esteem from pushing yourself to do the hard thing.

Your marathon training is going to be similar to when you started running. There are going to be tough times, times when you wondered what possessed you to do this. But when you tap into your mental motivation, it is going to get you through the hard times.
There are going to be moments of discomfort. You are going to have to reach inside yourself for the strength to keep going. Your mind and will are the strongest muscles you have. They are going to be exercised and pushed just like your physical muscles are.

There will always be an excuse not to run, but the payoff will only come to those who keep going. You will have bad days when life kicks you in the teeth. Get back up and get with the program. Don't waste the mental energy beating yourself up. Think about why you started and how far you've come. When your body begs you to stop, your mind can keep you going forward.

**How to Keep Motivated**

1) Keep a written record or your training and keep it where you can see it.
2) Find a fitness friend - at the gym, online, family, etc.
3) Read inspirational stories about people who overcome challenges.

Even elite runners have hard patches in their training. They say that after they've built up their base mileage, it comes down to pushing themselves through excruciating bouts of discomfort. You too will have to reach inside and find that inner toughness.

Research has shown that our pain threshold is not a concrete level. The mind to some extent can control how you perceive discomfort. I'm obviously not suggesting that you ignore sharp or nagging pain which could indicate an injury. Even though I've been running for years, my mind and body still try to play tricks on me.

The first 3 miles are so hard. I feel stiff, sluggish, and my mind asks, "Why are you doing this to yourself? Maybe you should just stop and walk." I'm sure you have similar things go through your mind and this is the point to tell that negative inner voice to "SHUT UP."
This is when you start listing your payoff and reminding yourself how awesome you are! And never doubt that you are a winner. Just by dedicating yourself to training for a marathon puts you in a very small minority of people who take on this challenge.

In a marathon you don't run to merely beat others. Instead you run to achieve a personal victory. It's hard to explain to non-runners why you would pay money to "abuse" your body. But anyone who has crossed the finish line understands. It's part of the mystique of the marathon. Everyone who crosses the finish line is a winner.

Oprah finished a marathon a few years ago. She said that running a marathon is a metaphor for life. It has obstacles, moments when you feel like giving up, when you're tired or overwhelmed. But you keep going. Finally you can see the finish line. She said it was a proud and joyful moment- one of the best she's ever had.

Veteran marathoner Hal Higdon says, "Your life will never be the same, and regardless of what the future holds you can look back and say, I finished a marathon."

Repeat after me, "I am strong, I am powerful, I am a marathoner!" When you cross that finish line and the medal is put around your neck, every second of hardship is going to be worth it. Your life will be changed forever.

Billy Blanks (Tae-Bo guru) said, "Where you are today is where your mind put you, where you'll be tomorrow is where your mind put you."

**Fitness Begins in the Mind**

Before you can physically run 26.2 miles you have to believe that you can do it. As human beings our minds are very powerful and can even affect the way our body functions. We want you to begin to develop a positive “I CAN DO IT” mentality when it comes to your marathon training. You need to actually begin to visualize yourself as a marathoner.
In a Harvard study, researchers discovered that students who visualized in advance of anticipated tasks performed with nearly 100% accuracy when tested, compared to those who did not visualize and achieved only 55% accuracy.

It is pretty common knowledge that the best performing athletes use the art of visualization to mentally practice their success before competing -- with outstanding results.

By working on the mental aspects of running, you can reach your full potential as a runner. A mind-body approach to fitness and athletics turns what seem to be impossible barriers into manageable hurdles. It enables you to achieve long-sought-after goals and find greater fulfillment and satisfaction in your running.

**Quit the Negative Self Talk!**

Before you achieve the mental toughness to run the marathon you might need to deal with negative self-talk. We are all guilty of negativity at some point or another. The key is not to get stuck in a negative pattern and have a constant “script” of negativity flowing through our minds. We need to recognize the wrong thinking, replace it with the positive, and reach our goals.

Negative self talk comes in the form of excuses and fear. The instances below are real excuses or fears that keep people from achieving their marathon goal. Notice how I have refuted the negative thoughts with positive truths.

**I don’t have time to train for a marathon!**

Your schedule probably isn’t any more crowded than George Bush, Al Gore, Oprah, Sarah Palin, or P. Diddy Comes. All these people are in high demand and all of them have taken the time to train for a marathon. If you don’t have time for health and fitness then you need a serious lifestyle redesign. “Well arranged time is the surest mark of a well arranged mind.” —*Pitman*
People in their 70’s, 80’s, and 90’s have all completed marathons: Consider the case of Tatsuo Okawara age 90 of Japan. This marathon and war veteran is already looking forward to running next year’s Honolulu Marathon with his best friend and running buddy who happens to be a bit younger, only 85 years old.

Then there is another determined senior citizen. Already Britain’s oldest employee, 101-year-old Buster Martin now aims to become the world’s oldest marathon runner by completing the London Marathon and celebrating with a pint of beer and a cigarette. Sprightly and bearded, he completed a half marathon over the weekend in five hours 13 minutes. The former Army physical training instructor works three days a week for a London plumbing firm and says he has trained for the April 13th race in his spare time.

You have to start somewhere. Many people have lost large amounts of weight and have gone on to reach their ideal body weight and run a marathon. Consider the final four contestants on the 2010 Biggest Loser. Their final challenge was to run a marathon. The day of the marathon dawned rainy and cold, but that didn’t get the contestants down. In the end, Daris finished fastest, coming in at 4 hours and 2 minutes and breaking the Biggest Loser marathon record! The other players also finished strong: Koli completed the course in 6 hours and 8 minutes, while Michael and Ashley brought up the rear, finishing in 6 hours and 26 minutes. This is an amazing feat for people who only months earlier were dangerously obese.
You have me. If you are really serious about your health and fitness join my motivational training program MTA Member. As a member you will get access to all my training lessons and resources for conquering the marathon and building a life of optimal health. We have a community forum where you can post your goals, get answers to questions, and connect with me. Another idea is to look for a local running club in your area. Lastly, recruit a friend to take on the marathon challenge with you. Steven and Anthony were two regular guys who decided to train for a marathon together and did a podcast about their adventure called “Two Gomers Run a Marathon”. You could be the next gomer!

I can’t run a marathon, I have a bad back, knee, pancreas and so on!

Thousands of people have overcome challenging health conditions to train for a marathon. No matter your problem, there is probably someone who was in worse shape than you who made it across the finish line.

On just another biking commute to work, NYC firefighter Matt Long was crushed by a bus. Due to the heavy blood loss, Long's blood pressure was dangerously low by the time he reached the OR. His body was also mangled with a compound fracture of the left tibia and femur, a compound fracture of the left foot, a fractured right shoulder, a fractured right hip, perforated abdominal walls, a torn rectum, extensive pelvic nerve damage, and a crushed pelvis. Doctors said his chances for living were five percent. But no one accounted for Matt Long’s strong will.

After five months and 22 surgeries doctors pieced Matt Long back together, but he was no longer the same man who’d gone under that bus. A titanium rod ran through his left leg, virtually from his hip to his ankle, supporting his shattered tibia and femur. Metal screws kept the bones of his left foot in place. His right leg
was two inches shorter than it had been before the accident, a side effect of his broken pelvis. His right abductors (the powerful buttock muscles that keep us erect and help propel us) were basically dead. He could raise his right shoulder no higher than 90 degrees. He underwent several surgeries to try to heal his battered abdominal wall muscles, and his stomach was sealed by processed cadaver skin. He had to relearn how to walk.

Surviving that kind of trauma was one thing. Finding the will to live again would be another thing entirely. Despite this extensive list of injuries, Matt Long reached for his inner athlete and after months of grueling training, ran the NYC marathon in 7:21. Wow a true hero!

**Now it’s Your Turn.**

This chapter has been about overcoming self-limiting thinking and reaching deep inside to find your inner athlete. Let your mind and will propel you toward your goal. Live healthy. Live large. You do have what it takes to run a marathon and change your life.

In the next chapter I will deal with the most commonly reported frustration for new runners – finding the time in your busy schedule to train for a marathon.

{Twenty years from now you will be more disappointed by the things that you didn’t do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream. Discover.

—Mark Twain}
Finding Time to Run

One of the most common reasons people give for not being able to run a marathon is lack of time. Even with all the technology we have it seems like modern life just gets busier and busier. If you wonder how you can possibly fit one more thing into your life, I can relate with you. Your life may be filled with family responsibilities, long hours at work, church or social commitments, college, and many more things. There are many days when I fight to keep my head above water too.

Exercise can easily be one of those things that gets pushed aside. However, I’ve found that taking the time to run actually gives me more energy to accomplish more during the day. Running benefits me physically, mentally, and emotionally. So, let’s look at ways to find time to train for a marathon.

The first thing we want to look at is the time investment needed to train for a marathon. To stay injury free during your training and have a great marathon experience you will need to:

- Take some time every day (except on the rest day) for running or cross training.
- Schedule a larger block of time one day per week for your long run.
• Set aside the time in advance for the race weekend!

It can be done with a busy schedule, however you need to be intentional and think through what areas of your life are important and what you can cut back on. You need to realistically decide whether you can make the time commitment to training for a marathon at this point in your life. It certainly won’t happen without dedication and a good training plan.

Let’s talk about some ways that you can be more intentional and achieve your marathon goal.

**Identify Your Priorities**
The first step is to identify your priorities. Ask yourself what the non-negotiables are in your life. This list may include your family, job, church, social commitments, school, sleep, etc. These items will vary from person to person. These priorities are things that you should not or cannot cut out of your schedule. I certainly don’t want you to damage your health, career goals, or family relationships in order to run a marathon.

When I trained for my first marathon I had to rob time from somewhere, especially on days that required a long run. At that time my husband was going to work at 7:15 in the morning. Our children were very young – ages one and three. I decided to get up early and do my training runs before he left the house. This meant that I had to get to bed earlier at night and have less time for reading or television after the kids were in bed.

*If you want to make good use of your time, you’ve got to know what’s most important and then give it all you’ve got.* — Lee Iacocca
Know Thyself
You’ll need to come up with a workable schedule to fit in your exercise routine. What time of day would be best for you to run or cross train? Evaluate when you can schedule your run. Morning works best for most people and has the least chance of getting pushed out of the way for something else. However if you are a night person and can’t get up in the morning or you work until late in the evening, you’ll find yourself constantly frustrated.

We did a survey of MTA listeners about the best time they’ve found to run and this is what we discovered: 56% run in the morning, 30% at evening/night, and 14% on their lunch or work break.

I’m a morning person and prefer to run and exercise early in the day. I find that if I don’t get it done then, it might not happen at all!

*You’re writing the story of your life one moment at a time.* Howard Martin

Schedule in Advance
Figure out what day of the week you will do your long run on? The long run will be your biggest time commitment and you will need a consistent block of time each week to get this accomplished. Most people find that they have more free time on the weekend and schedule their long runs for either Saturday or Sunday. Block out the time on the calendar each week taking into account that the amount of time required will lengthen as you build up your long run mileage.

In addition to planning for your long run, having a daily, weekly, and monthly schedule is a great time management tool. We often end up reacting to life as opposed to making time for the things that really matter. You’ll probably get more accomplished and feel more satisfaction with your life if you live by a schedule. For example, try to get up at the same time each day, exercise in the morning, eat a healthy breakfast, and get to bed as early as possible.
"Until you value yourself, you will not value your time. Until you value your time, you will not do anything with it." M. Scott Peck

Eliminate the Non-Essentials
Something has to give! What things can you cut back on or cut out to make more time for training? These non-essentials may include time spent on the internet, Facebook, watching TV, or even reading. Remember that training for your marathon is going to be so much more rewarding in the long run than keeping up with your favorite TV show or checking FB every day. You need to decide what your priorities are going to be. You may find that you have to sacrifice some sleep to get up and exercise in the morning.

“Time equals life; therefore, waste your time and waste of your life, or master your time and master your life”. Alan Lakein

Communicate Your Time
Communicate your schedule with family and significant others in your life. They need to know what to expect and how they can support you in this effort. If you try to do it alone, you may find yourself unsuccessfully trying to juggle everything. In general, the significant people in your life are more likely to be supportive if you talk with them about your goals and the specifics of how they can help. If you have children you may need to work out a time for your spouse to watch the kids, take them with you in a jogging stroller, or even find a babysitter.

My husband and I have to communicate about our exercise schedules. I generally like to run in the morning and schedule my long run for a day when he can watch the kids. Having a plan and communicating with each other helps us both achieve our fitness goals.
“In truth, people can generally make time for what they choose to do; it is not really the time but the will that is lacking”. Sir John Lubbock

Let’s review the steps in finding the time to run:

- Decide what time of day you are going to run or cross train.
- Write down the non-negotiables in your schedule.
- Figure out the non-essentials to eliminate.
- Communicate your weekly schedule with your family and put it on a visible calendar.

In the following chapters of this book I am going to give you a proven road map for marathon training success. You will then have more information (and better information) than I had while preparing for my first marathon. Now it is up to you to take consistent action toward your goal.

Remember these three words: **Bold Massive Action**
Choosing the Right Equipment

Running can be a relatively simple sport in regard to equipment. In reality all you need is a good pair of running shoes. That's good news for a cash-strapped runner like me. For years I have gotten by on a stop watch I found at the dollar store and a hand held water bottle. Now I've moved up to a hydration belt and GPS watch.

So, what should you invest in, and what can you skip?

Running Shoes

A good pair of shoes is worth the investment. There are literally thousands of running shoes to choose from. On one hand, you don't need to buy the fanciest most expensive pair available, but you probably shouldn't head to Wal-Mart for a cheap pair either. If you're thinking, "hey, I've got a pair I've hardly worn that have been in the back of my closet for a few years," think again.

Even without use the shoe materials can degrade and not perform as needed. So, go buy a new pair you cheapskate. If you've never been fitted for running shoes before, go to a specialty running store where they'll evaluate your foot type and
gait. Having a supportive and comfortable pair of running shoes will make all the difference.

Understanding Your Foot Type
You can evaluate your foot type by wetting the bottom of one foot and stepping firmly on a paper bag. Look at the wet imprint left and evaluate how much of your foot came in contact with the bag. A high arch will imprint your toes, ball of foot, and heel but very little of the length of your foot will shoe up. A normal arch will imprint all of the above and also a 2-3 inch outline of your foot length. A low arch or flat foot will print the entire bottom of your foot.

Good information can also be gleaned by evaluating wear patterns on your shoes. Take a pair of well-worn, flat soled shoes on a table or counter and look at them at eye level. Focus on the heel. Do they lean inward or outward? Is the heel wearing evenly or is more wear on the inside or outside? Are some parts of the sole worn and others are not? This can give you clues about your foot movement or pronation. Pronation is simply the action of the foot rolling inward toward the middle of the foot. Most runners will fall into three basic categories:

1) Neutral (normal arch)- the foot strikes the ground near the outside of the heel and rolls slightly inward to the inside of the ball of the foot which absorbs the shock of your weight as you land.
2) Overpronation (low arch, flat feet)- the foot strikes the ground near the outside of the heel but as it rolls to push off it rolls too far inward and the weight shifts too far to the inside of the sole causing more range than normal.
3) Supination (high arch)- the foot strikes the ground in the right place on the heel but it doesn't roll inward enough creating less than normal range.

Having a basic understanding of your foot type will help you choose the best pair of shoes. Now that you have a great pair of shoes, remember that they'll only last for 400-500 miles. A good way to track how many miles are on your running shoes is through your running log. After 400-500 miles the inner support of the
shoe starts to break down even if the outside still looks almost new. The outer materials of running shoes are built to withstand around 800 miles, so don't be deceived by the outward appearance.

**Tips for Buying Shoes**

1) Try on shoes in the afternoon to accommodate for natural foot swelling (the foot swells around one half size during the day and during running).
2) You should be able to fit the width of the index finger between the end of the longest toe and the front of the shoe upper.
3) Make sure the toe box has enough room to allow for up and down movement of the toes (they shouldn't feel cramped).
4) The shoe should feel comfortable when you walk in it (take it for a short test jog if allowed).
5) Make sure your heel doesn't slip out of the heel counter of the shoe when you toe off.

**Running Clothes**

Running clothing doesn't have to be anything fancy. There are veteran marathoners who train in ratty sweats and old t-shirts. There are novices who are decked out in the latest technical gear. Clothing isn't going to make you a better runner, but it can help make it a more comfortable experience. As a general rule the two most important considerations for running clothes are fabric and fit. Let me explain.

**Concerning Fabric**

When I run, I sweat, a lot! Depending where you fall in the sweating continuum will determine what kinds of fabrics will be most suitable for you. If you don't
sweat much and you're not going a long distance, a cotton t-shirt may work fine. If you can wring your clothes out after a run, cotton is not your friend.

In general, running clothes perform best when made of technical, sweat-wicking materials. These polyester and wool blends transfer the moisture from your skin outward where it can be evaporated and hopefully keep you drier.

Good fabrics to try are CoolMax, Dri-Fit, and other synthetic brands. Cotton likes to keep every drop of sweat and that can lead to a gross, heavy article of clothing that rubs in all the wrong places. During a marathon I did in Memphis I saw a guy running in a cotton sweat suit. Granted, it was December, but this poor guy looked like he had wet his pants, and this was at mile 10. I can't imagine what he looked like at mile 26! I think the most important lesson to be learned is to test your running clothes before an important race. Find out what fabrics work well for you and stick with them.

Concerning Fit
This may seem obvious, but choose running clothes that fit well. The pieces should move easily with your body and not bunch, bind, dig, or ride up. You don't want your clothing too tight, but you might also be annoyed if it has too much material and is too loose. No one wants to hitch their shorts up every couple of steps.

Again, make sure you test each article of clothing on a long run before you wear it to a race. A bad clothing choice can easily put more hurt on you then you need. I think every runner probably has their horror stories of poor clothing choices. I know I've been rubbed raw before and don't want to repeat that experience again.

There are many great choices in running clothes available from the ultra expensive to fairly reasonably priced. Remember, unless you are a front of the pack runner, your tights are probably not going to make much difference to your race times. I've found some great running clothes at places like Kohl's, Wal-Mart,
and Target. You may also want to check out online sales after you know what kind of clothes you want. I won't bore you with the specifics of every available choice of running clothes, but let me talk quickly about socks and sports bras.

Everyone likes something different in a running sock. Remember, 100% cotton is going to be a terrible option (unless you like sweaty feet and blisters). Some people like low cut, ankle, tube, toe hugging, etc. Find a sock with comfortable cushioning and a good fit (no bunching, binding, or slipping).

Attention ladies: You need a good sports bra. In 1977 two American women took two jock straps, cut them apart, sewed them back together, and the Jogbra was born. According to studies a D cup bounces an average of 6-8 inches with each step which can cause sagging, stretch marks, and chaffing. Thank you inventors of the Jogbra.

To risk repeating myself a shorts bra should NOT be made of 100% cotton and instead be a synthetic blend. In general, it should be made for high impact activities, have a good fit (should not wrinkle, bunch, cut, or dig), be made with seamless fabric, and not be stretched out. Always try it on and see how supportive it will be by jogging in place and jumping up and down. Smaller chested ladies (A and B cups) will probably have an easy time finding good support.

I like the brand *Champion* which is sold at Target and reasonably priced. If you are a C cup or above you might want to check out lines of bras made specifically for larger chests and that feature increased support, individual cups, wide shoulder straps, racer back, and front hooks. Two good sports bras for the well endowed are Enell and the Shock Absorber D+.

So, if you've got the right fabric and fit you are set to choose the perfect socks, shorts, bras, and tops. The key is to dress as lightly as possible while running (without scandalizing anyone). A general rule is to dress as if the temperature is 20 degrees warmer (your body will heat up).
Other Gadgets and Gear

Other equipment that I encourage you to purchase includes a sports watch, reflective vest, and portable ID. I recently purchased a Road ID to wear while running and feel an extra measure of security when I have it on. You can now get an online version where more of your detailed information and health history is stored online. Check out RoadID.com.

A sports watch is another wonderful addition to your training. You can go as simple or as fancy in this area as you want. If you are really into racing or doing track workouts you might want to invest in something with a few more of the "bells and whistles." There are watches that track heart rate, have GPS, and seem to do everything except actually run the miles for you.

My first running watch came from the dollar store. Shocking, I know. It only had stop watch capabilities but it saw me through two marathons and countless training runs. I’ve since upgraded to a Garmin Forerunner 110 with GPS and heart rate monitor. Click Here to see what it looks like.

A final piece of equipment which will add a measure of safety is a reflective vest. If you run outside at all, this is something you should look into purchasing. There are a variety of options that won't make you look like a construction worker. I ordered by Nathan vest online and have enjoyed at least two years of use so far.

Trevor teases me when I don my safety vest, but I’m sure he would rather not find me under a truck tire. As we all know, drivers are increasingly distracted by all manner of devices (we can be guilty of it too). It's up to us to make ourselves visible and run defensively.

Now you know what kind of running gear to invest in. Start with a new pair of running shoes that have the correct fit. Add some technical running clothes to your wardrobe. Be mindful of safety with a portable ID and reflective device. Put on your sports watch, grab your water bottle and you’re ready to go. Have a great run.

In the next chapter I discuss the one thing you must do before beginning any marathon training program.
First Build Your Running Base

The most important step to becoming a successful (and injury free) long distance runner is to build a solid running base. So, what qualifies as a good running base?

Building your running base can easily be compared to building a house. You must start with constructing a solid foundation, which will support the house for years. The integrity of the home is determined by the strength of the foundation. When adequate time is not spent gradually building a solid foundation of training, your body is more likely break down as you transition into the longer, harder training workouts.

The key to building a solid base is to start by identifying where you are in your running career. Because base training comes before you actually begin a training plan, it's often overlooked. Many people have made the mistake of jumping right into a 12 week marathon training program before they have built a sufficient base. Bad idea! You need to respect the distance.

The truth is, the marathon is too hard of a distance to rush into. I wish I could give you three easy steps to running a marathon but unfortunately it doesn’t work
that way. It will take hard work and time. In the process you will build a healthier soul, mind, and body.

I do not recommend that anyone starts training for a marathon until they have built up a running base of 3-5 miles at least 3 times per week for 4-6 months.

**Solid Running Base =**

- You have run 3-5 miles 3 days per week for 4-6 months

In the beginning your pace doesn’t really matter because building a base is all about logging on the miles. If you are a slow runner don’t worry about it. You are not trying to compete with anybody. Speed will come later, just log those miles!

You should gradually increase your overall mileage as you go. This increase in mileage not only will give you the endurance to perform well during long races, but it will also give you the endurance to run fast at shorter distances without getting fatigued. In running, endurance is everything. Build your base, increase your endurance, and go longer.

For the newbie (or those who’ve fallen off the running wagon), base building means starting from a lower base of infrequent mileage and progressing to more frequent runs including two to three shorter runs and one long run per week. Base building for the newbie is defined by building regularity in training at consistent, easy-to-moderate effort levels, while high intensity, speed work is left for later.

**Before You Tackle the Marathon Distance Do the Following:**

1) Start slowly: if you cannot easily run 30 minutes check out our beginning runner plans (couch to 5k).
2) Run 3 days a week with cross-training interspersed between to build overall muscle strength. Cross-training serves as active rest for the running muscles. By alternating running days with cross-training days, the body can train at a higher overall frequency (five to six times per week) without the high risk of injury from running on back-to-back days. I will talk more about cross-training later.

3) Don’t increase mileage too fast = increased risk of injury and burnout. Add another running day each week when you are running 3-5 miles at least 3 times per week if you want. Don’t increase your mileage significantly AND add another running day to your week at the same time.

4) Remember the 10% rule. Only increase your mileage by 10% per week. In other words, if you ran a total of 10 miles last week then add 1 mile the next. If you ran 15 miles last week then add 1.5. Understand?

5) Listen to your body. Every runner has a different running threshold.

The key to successful base training is adding enough intensity to boost your fitness but not so much that you get burned out or feel like you're training at your maximum too early.

**Now Try to Intersperse Easy and Hard Workouts**
As you progress in your running career, the base building phase changes to include short and long easy runs, hill runs, and short interval speed workouts. Doing one or two quality workouts a week, such as hills, tempo runs, or Fartlek sessions, will rev the cardiovascular system and stimulate the fast-twitch muscle fibers. Try to also schedule in a slightly longer run of 45 to 90 minutes.

Remember during base training, gauge intensity by feel rather than by pace, since the number on your watch may push you to go faster than you're ready for.
Gauging your effort allows you to run at the right level for that day. Here is an example of interspersed workouts.

\[
\begin{align*}
\text{Running day 1} &= \text{easy run} \\
\text{Running day 2} &= \text{harder run (speed, tempo, or hills)} \\
\text{Running day 3} &= \text{long run}
\end{align*}
\]

Building your base is also a great way to build confidence in your running abilities. Once you run 3 miles you know you can do that at any time. Build your base and have the confidence to run any race, at any distance, at any time.

When you first start running again, put on the distance, work your way up, and build your base before doing any speed work. Everyone has to start from the bottom, build a proper base while you are there.

In the next chapter I will help you perfect your form to maximize the miles and minimize the injuries.
Chapter Seven

Now Perfect Your Form

Our podcast episode on running form was one of the most popular episodes we have produced through Marathon Training Academy. We were featured on the first page of Itunes along with This American Life and the Dave Ramsey Show. Since then we have consistently stayed in the top 50 podcasts in the fitness category.

About that time I received emails from people all over the world saying that they saw instant improvement in their running form after using the information I am about to give you.

Why Running Form Matters

Having good form can save energy and decrease the chance of common running injuries. If you are a new runner it is important to learn good running posture so that you don't pick up any bad habits. If you've been running a while, be sure to evaluate your running form to see if there are areas that need improvement.

Let's take a look at each body part directly involved in running.

1) The Head
Good running posture starts with your head. Let your gaze guide you as you look ahead and scan the horizon. Imagine that you're a marionette puppet and a string is coming out of the top of your head pulling it up. Run with your mouth open and develop a pattern of breathing step by step. Breathe in-in as your feet hit the ground and then out-out as they hit the ground again. This breath control will help you avoid huffing and puffing and sounding like you're going to die.

2) The Shoulders
Keep your shoulders low, loose, and level. They shouldn't dip with each stride or feel tense or tight. If you feel tension starting in your shoulders creeping toward your ears, let your arms hang loosely at your sides and shake out the tension.

3) The Arms
The arms provide balance and coordination with your legs. Your hands control the tension in your upper body, so don't clench your hands in fists. Let your fingers lightly touch your palms (imagine carrying a potato chip in each hand). Elbows should be bent at 90 degrees and should swing forward and back. Don't drive your arms forward as you run, drive them backward. Keep your arms close to the torso but don't allow them to cross the midline of your body as they swing back and forth. If you feel tension in your arms or shoulders, let your arms drop to your sides and shake them out.

4) The Torso
This part of the body is controlled by head and shoulder position. Keep your back straight and upright to increase lung capacity and maintain a slight forward lean (the lean should start from your ankles). Your upper body should be in balance with your legs and hips.

5) The Hips
Your hips are your center of gravity. Point your hips straight ahead and if your torso is correctly aligned then your hips will follow suit.
6) The Legs
Distance running requires a slight knee lift, a short stride, and quick leg turnover. This will create fluidity and avoid wasting energy. Your feet should land directly under hips with knee slightly flexed as the foot hits the ground. If you have proper knee lift it will feel like you are driving the knee forward and not upward. Over-striding decreases speed and efficiency and puts stress of your knees, hips, and back.

7) The Ankles and Feet
Your foot should hit the ground lightly (not slap or pound the ground) between heel and mid-foot toward the outside of your foot and roll quickly forward as you push off with your big toe. The ankle will be flexed as the foot rolls forward to push off. You should feel your calf muscles propelling you forward without bobbing up and down.

Beware of Overpronation! Overpronation is when the foot rolls too much during the landing and push off phase and puts too much stress on the foot. It can be caused by weak muscles in the lower body or stride problems. Many experts recommend barefoot walking and running to strengthen and stabilize the ankle and foot muscles and you can also invest in motion control shoes.

Beware of Heel Planting! If you plant with your heel instead of your mid-foot this may be the result of over-striding. Heel planters are also known to have shin splints and knee problems. My husband Trevor was having piercing knee pain because of heel planting. When he switched to a minimalist shoe, with a reduced heel, the knee pain went away. The minimalist shoe allows him to miss the heel and strike more with his mid-foot.
What About Running Pace?

Your perfect running pace is that zone where you feel like you could run forever. I try to get in this zone in the first mile of my run and since I’ve been running awhile I can feel when I’ve hit it. Here are some tips for finding that perfect zone.

First warm up by jogging for 1 mile. Then run 1 mile (1600 meters) around a track, time yourself, and pay attention to the following:

1) Breathing: you should be comfortably exchanging air; no huffing, puffing, or gasping.
2) Running form: use correct form; keep the head up and eyes looking straight ahead, arms comfortably swinging by sides, legs in rhythm and not over-striding.
3) Perceived level of difficulty (1-10): 10 hardest and 1 no effort; you should be at a 7 and able to talk in short sentences.
4) Heart rate: 70-75% maximum heart rate (HR); find max HR by taking your age minus 220.

The time it takes you to complete a mile considering these factors is your average running pace. As you build your running base and become a fitter runner, your running pace will increase. Another way to increase your pace is to include speed work or tempo runs into your training. With time and effort you can become a faster runner with increased endurance. So find your running pace, get going, and get in the zone.

I have devoted the next chapter to giving you tips and strategies for running faster.
Chapter Eight

How to Improve Your Time

When I ran my first marathon I just focused on finishing. My time was 4 hours and 10 minutes. When I trained for my second marathon I really wanted to finish in less than 4 hours. I trained harder and smarter . . . and on race day I finished in 3 hours and 59 minutes! I was ecstatic!

Runners are a very competitive breed. We compete primarily against ourselves. Once you finish a race you will begin to lust after the next challenge. A desire to run faster or further will well up from somewhere deep down in your heart and will.

If you have ever wondered how to improve your next race time, the secret is knowing how to implement “speedwork”.

The Magic of Speedwork

The body has an amazing ability to adapt to the demands you put on it. If you train at the same pace day after day, week after week, year after year, that's the kind of running your body will get used to. But if you break out of that comfort
zone with a little speed work your body will learn to deal with the new demands. Your heart will get stronger, your cardiovascular system more efficient, and your muscles better able to function at full force. That will translate into greater strength, faster times, and easier daily runs. Plus you'll just plain feel better.

Before starting speed-work you should be comfortable running steadily for 30 minutes three to four times a week.

What to Know Before you Start Speedwork

1) Find the right course and pay attention to the surface. You won’t want to do speed work on a trail or other hazardous path. Avoid roads with lots of traffic, potholes, hills, speed bumps, and other obstacles. A smooth surface is important.

2) Avoid fast downhill running. It looks easy, but it's actually tough on the muscles and can lead to injuries in a hurry. Get going too fast and you might do a face plant and end up with a bad case of road rash.

3) Warm up, stretch, and start slowly. Always begin with 10 to 15 minutes of easy running before you pick up the pace. Warm muscles will help you perform better and decrease your chance of injury.

4) Focus on form. Speedwork improves your system's bio-mechanics. Think about form when you run fast so that you don’t start developing bad habits. Visualize yourself running lightly, smoothly, and efficiently.

5) Make it fun. Faster running may be a new kind of effort for you, but it doesn't have to be drugery. Break up the monotony by playing speed games and enjoying the difference in pace.
6) Take a rest day. If you're used to running the same pace day after day, you'll need to work at developing true rest days. Make sure you devote at least one day a week to rest. Giving your muscles a break is even more important when you add speed work to your routine. Don’t do hard workouts back to back. Muscles need time to rebuild and repair themselves. Taking rest days and alternating hard workouts with easier efforts will decrease your chance of injury and make your running workouts higher quality.

7) Expect a little discomfort at first. Your body has probably adjusted to your normal pace. It will definitely complain as you expect it to go faster. Your lungs and legs may burn and you’ll feel more short of breath. But you shouldn’t experience sharp or excruciating pain. As you work on increasing speed you may notice delayed onset muscle soreness (DOMS) 24-72 hours later. That’s okay, your muscles are just being challenged in a new way and this is the path to improvement.

5 Specific Ways to Get Faster:
1) Tap into intervals: Interval workouts can be a fun way to work on your speed. These are best done at the track so that you can accurately measure your distance. After a 10-minute warm up, alternate running 400 meters (one lap) at your 5K pace, then jog one easy recovery lap. If you can run a 5k (3.1 miles) in 24 minutes then your 5k pace for 400 meters would be approximately 2 minutes. Start with two or three 400 meter repeats (with a recovery lap in between each), and work your way up to five or six.

If you don’t have access to a track you can do the same workout on the road. Find a flat, straight stretch of road. You can use lamp posts or telephone poles to mark your intervals if you are unsure of the exact distance. After warming-up for 10 minutes, try sprinting for two telephone poles, then recover for two, and keep repeating the pattern until you've covered a mile.
2) **Tackle the tempo:** Do a tempo workout once a week. Tempo runs help you develop your anaerobic threshold which is critical for running faster. Anaerobic threshold refers to the point at which your muscles begin to burn fuel in the absence of oxygen. This will allow you to run faster with less fatigue. One running coach said that the tempo is the single most important workout to improve your speed for any distance.

To do a tempo run, start your run with 10 minutes of easy running. Next continue with 15 to 20 minutes of running near your 10K (6.2 miles) pace. If you can run 10k in 60 minutes your pace would be approximately 10 minutes per mile. If you're not sure what your 10K pace is just run at a pace that feels "comfortably hard" or an effort of 8 on a scale of 1-10. Finish with a cool down run of 10 minutes. As you get stronger and your endurance improves, increase the length of your tempo training. The longer you can maintain a comfortably hard pace the better. Practice this workout for several weeks and you’ll probably be rewarded with a PR at your next race.

3) **Test your strength on hills:** There are many benefits to hill training. You’ll get stronger glutes (butt muscles), hamstrings, calves, and quadriceps muscles. You’ll say goodbye to boredom. Other benefits include developing a stronger upper body (your core has to work harder to stay upright and you’ll drive your arms harder) and increased confidence. You won’t be intimidated by a hilly course if you’ve trained for it.

Hill repeats are a very effective way to build up your running strength. We live in a very flat area and when I visit my sister (who lives in a hilly area) I quickly find out what kind of shape I’m in. It takes extra lung power and leg strength to be able to run hills without feeling like you’re going to die!

After warming up for 10 minutes by running at a comfortable pace, find a fairly steep hill that's about 100-200 meters long. Run hard to the top of the hill and slowly jog back down. Try to push yourself hard up the hill while not letting
your form fall apart. Don’t stare at your feet. Instead, focus your gaze 10-20 feet in front of you to stay mentally focused on the hill.

Start with 3 to 4 hill repeats once a week and gradually work your way up to 6 to 10 repeats. Don’t do hill repeats more than once a week. You’ll definitely need time in between hill workouts to recover. At first you may notice some muscle soreness. Try mixing up the hills you try—some short and steep and others longer with a smaller incline. Hills come in all different lengths and degrees of incline, but the basic concept of a repeat is usually the same. Your goal is to run up the hill fast and then recover by jogging down.

If you live in a flat area like I do, you can accomplish the same workout on the treadmill. Warm up with 10 minutes of easy running. Next, bump the incline up (to whatever level feels challenging for you) for a ¼ mile (or 400 meters). Recover by jogging at 1% incline for ¼ mile. Repeat this routine 3-4 times and work your way up to 10 repeats. Always cool down for 5-10 minutes afterward.

4) **Torch some pounds:** I know that this is easier said than done, but a one pound weight loss will make you 2 seconds per mile faster. Drop 10 pounds and you’ll take 1 minute off your 5k time. A 150 pound (68 kg) runner burns approximately 100 calories per mile.

How to torch the pounds off

- Run regularly. Just adding one more day of running or other cardiovascular exercise per week can help burn more calories.
- Add some weight training. The more muscle mass your body has, the more efficiently your metabolism is going to work. Muscle adds to your calorie-burning furnace, fat does not.
- Eat a healthy, balanced diet. You don’t necessarily need to cut calories. Just focus on more quality foods. Eat less processed, junk, fast, and sugary foods while adding more fresh whole ingredients.
• Challenge yourself physically. If you start incorporating speed work and hill training your body will start noticing. Studies show that adding speed work is one of the most effective ways to burn more calories.
• Check out the chapter on Nutrition for some more weight loss suggestions.

5) **Try the Fartlek:** You may be thinking, fart-what?? Fartlek is the Swedish work for “speed play.” It is simply sprinting and jogging off and on during a run. Instead of keeping the same pace through your whole workout you sprint, then jog, then sprint again whenever you feel like it. With the fartlek one size doesn’t fit all. If you feel sluggish, limit the number of sprints you do, and take more time to recover. If you have a lot of energy, run the sprints hard, and sprint again when you don't feel totally recovered. One reason that the fartlek workout is so popular is that it is so flexible.

Make sure that you warm up for at least 10 minutes to ensure that your muscles are loose enough to handle the accelerations in speed. A good way to run this workout is to pick out objects ahead of you like a telephone pole and sprint from that pole to the next and then jog to recover. Any fixed object will work: houses, mail boxes, trees, or road kill. You probably get the picture. Be sure to cool down for 10-15 minutes after the workout. The fartlek can be a difficult workout, and if you don't warm up and cool down properly, you could have some very sore muscles the next day.

Implement speedwork into your training and you will see your time improve. Mix in the other training principles that I am going to show you in this book and you will be well on your way. The new personal record will be very emotionally rewarding.
Chapter Nine

Don’t Forget Cross-Training!

Training for a marathon requires lots of running. But, other exercises need to be incorporated into your training regimen to ensure that you cross the finish line strong and healthy.

When I trained for my first marathon I ran at least 5 days per week and did little cross training. If the weather was bad I might do an exercise video, but I didn't have a plan for stretching or core strengthening. Throughout my training program I struggled with shin splints and knee pain. It was frustrating to deal with these injuries.

While training for my second marathon I was taking a power yoga class twice a week. I also incorporated weight training and some cycling. My marathon training program only required 3 days of running per week and emphasized cross training.

I was able to finish this second marathon without injury and discomfort and felt like I was stronger and in better shape overall. Now I highly recommend a schedule of stretching and cross training to anyone training for a marathon. I
separate stretching from cross training because I feel that stretching is vital after every run.

**Here is a Sample Week From My Training:**

- **Sunday** - rest day
- **Monday** - run 5 miles easy + stretching and core workout
- **Tuesday** - power yoga 1 hour
- **Wednesday** - run 6 miles intervals + stretching and lower body weight training
- **Thursday** - power yoga 1 hour
- **Friday** - 1 hour cycling + upper body weight training
- **Saturday** - 12 mile long run easy + stretching

Some running purists will argue that the best way to get in running shape is to only run. I agree that running is the best way to train for a marathon and that building the long run is absolutely essential to going the distance. But in the research I've done and from personal experience, I've found that many people's bodies can't handle a 5-6 day/week running schedule.

Everyone has a mileage threshold that their body can handle. If they go over this level they start to have an increase in injuries and may get burnt out. To combat these problems almost every reputable running expert recommends focused cross-training.

Cross-training should not be a substitute for a scheduled run unless you are injured. It is also important to avoid letting your cross-training wear you out and decrease the quality of your running. Rather, some benefits of scheduled cross-training include:

- Balancing muscle groups
- Increasing cardiovascular fitness
- Improving strength and power
- Decreasing your chances of injury
• Giving injuries time to heal
• Busting boredom

Cross-Training Ideas
So, what are some good cross training activities to choose? The following list is certainly not comprehensive, but provides an overview of beneficial activities for the runner. Choose at least one of these exercises to incorporate into your weekly routine.

1. Swimming
   In my opinion swimmers are some of the most physically fit people on earth. It may look easy, but the motions of swimming give general conditioning to the whole body. It can help with relaxation and recovery and provide an aerobic benefit without weight bearing.

2. Water jogging
   Water jogging is perfect for avoiding hot weather and for the injured runner. It uses all muscle groups but because your body is lighter in the water it puts less stress on your joints.

3. Rowing
   Rowing is one of the best exercises for the upper body and abdominals. It helps build strength in core muscles which will benefit the running motion.

4. Cross country skiing
   Cross country skiing is a total body workout that is cardiovascular in nature and has the benefit of being non-impact. It takes a great deal of effort to propel yourself across the snow and lots of coordination to use an indoor Nordic track machine.

5. Cycling/Spinning
Cycling and spinning focus on the lower body and also increase cardiovascular fitness. They are a perfect balance to running because this exercise works the quadriceps and shins.

6. Elliptical trainer
   The elliptical mimics the running motion in a non-impact way. You should run backward 1/4 of the time to work the front of your leg so that the muscle groups don’t become imbalanced. Don’t make the mistake of doing all your running on the elliptical. It won’t prepare you adequately for the impact of road running or give you the same cardiovascular workout.

7. Walking
   Walking uses the running muscles but with much less impact. Use walking as a cross training exercise sparingly. One of the goals of cross training is to work other muscle groups to become a more balanced runner.

8. Stair climbing
   Stair climbing is an aerobic exercise that works the quadriceps and glutes. It is great for building lower body strength. If you aren’t used to doing stair climbing be sure to ease into it gradually and not do it before a hard or long run (you may be too sore to move the next day).

9. Rope jumping
   Jumping rope is a good total body workout that requires minimal equipment. It may even transport you back to your childhood days. Even though it is a fairly simple exercise it does require concentration, coordination, and will have you worn out after a few minutes. Again, this is a good workout to ease into slowly to avoid having “rubber” legs the next day.
10. Skating (incline or ice)

Skating works the lower body and increases cardiovascular fitness. This sport requires a good deal of coordination and practice. It can be hard on the ankles if you aren’t conditioned for skating and this may lead to injury in the newbie. Unfortunately I was not blessed with natural coordination and my ankles will be better off if I avoid this activity altogether.

11. Group sports

Examples of group cross training activities include basketball, racquetball, baseball, tennis, and hockey. Group exercise sports are great to decrease boredom and get a cardiovascular workout. Somehow the time goes more quickly when you are engaged in a game and are interacting with other people.

12. Pylometrics

Pylometrics involves speed, agility, and balance drills. This can also include circuit training, sprinting, and other forms of skill conditioning. Regularly practicing pylometrics can be a great way to strengthen your muscles, improve balance, and make you a faster runner.

Rules for Effective Cross-Training

1. Cross training should not be a substitute for a scheduled run unless you are injured.
2. Don't let your cross training wear you out and decrease the quality of your running. Watch for signs and symptoms of overtraining: increased resting heart rate, fatigue, frequent illness, heavy legs, and mental burnout.
3. Have a plan (don't just do it).
4. Add cross training gradually if you are not accustomed to the activity.
5. Use appropriate cross training activities that will benefit your running. Unfortunately things like golf, bowling, and air hockey are probably not going to provide you with an adequate workout. Cross training should have a similar duration and intensity to your running.
6. Don't put more stress on injured areas.
7. Know when to stop.
8. Enjoy the benefits of cross training.

If you are training for a race it is important to be cautious about doing high-impact, jarring sports such as tennis, racquetball, basketball, soccer, volleyball, skiing, and aerobic dance as these may increase your risk of injury. Too many runners have had to miss out on their marathon because of a careless injury. Injured runners should use cross training as allowed by their doctor.

I've found that cross-training has had a beneficial impact on my training. I highly recommend cross-training, focusing on stretching after every run, core training at least 2 times per week, and weight training two times per week.

In the next chapter I will reveal another secret of smart marathon training – focused stretching.
Chapter Ten

Don’t Forget Stretching!

As technology has increased the average person has become very sedentary. Whether we’re stuck at a desk or in the car, too much sitting can take a toll on your back muscles while shortening hip and hamstring muscles. So, what can we do to increase flexibility and reduce the risk of losing proper muscle range of motion? A recent study in the Journal of Strength and Conditioning Research found that stretching three times per week can make a significant difference in four weeks.

Runners tend to be more active than the general public. But, stretching may be one of the most important things that runners neglect. After a run it is easy to “move on” to the next part of our day like getting something to eat and taking a shower.

I did an informal survey on our Facebook page and found that of the 50 respondents, 20% rarely or never stretch. Among the runners who do stretch, 50% find the most benefit stretching after a run and 10% practice yoga regularly.
Taking the time for 5-10 minutes of focused stretching after a run can be beneficial in several ways.

According to Dr. David Musnick and Mark Pierce, (in their book "Conditioning for Outdoor Fitness"), "The goal of stretching is to lengthen a muscle and move the corresponding joints through the full range of motion, thereby allowing both the contractile structures (muscle and tendon) and the noncontractile (ligament and joint capsule) structures to lengthen." Stretching has many benefits for runners.

Benefits of focused stretching:

- Reduced muscle soreness and fatigue by flushing lactic acid out of the muscles.
- Helps prevent or treat muscle and joint injuries
- Works to prevent muscular aches, pains, and cramping
- Increases the muscles efficiency and effectiveness of movement to improve your overall speed, stamina, posture, balance, and form.
- Great for relaxation and relieving muscle tension

The Argument against stretching:
There is much debate in the running and sports community about the value of stretching. Some coaches argue that running provides the necessary range of motion for muscles. Others point to lack of evidence that stretching prevents injuries. How can the saavy runner make sense of the conflicting data?

It is true that stretching cold, tight muscles can result in strains and possibly tears. It’s like putting a rubber band in the freezer for a few hours and then stretching it suddenly. Chances are it will break! Stretching with bad form or tight muscles is the third leading cause of injury in runners. In most arguments between stretchers and non-stretchers, the controversy inevitably comes down to
"stretching helps prevent injuries" and "stretching is a leading cause of injuries in runners".

When stretching exercises do cause injury, it is usually because the muscles are tight or cold, or because the stretcher is doing too much too fast, or using poor form.

The best way to decide whether or not to stretch is to try out a few different routines (including not stretching) and see what works best for you. When you find one that works for you, stick to it no matter what your neighbor says. You don't need to fix what isn't broken. Most importantly, if it does break or if your routine stops working for you, try out some other routines until you find one that works.

Targeted stretching of abnormally tight muscles and tendons has proven to be an extremely effective means of rehabilitating and preventing the recurrence of specific injuries in runners. This is because abnormal tightness in specific muscles and tendons is a contributing cause of certain running injuries. Stretching can help increase the elasticity of muscles and tendons.

Every day, sports medicine doctors and physical therapists prescribe targeted stretching exercises to rehabilitate and prevent recurrence of different injuries that are frequently associated with tightness in muscles and tendons. When you stretch, the muscle fiber is pulled out to its full length, and then the connective tissue takes up the remaining slack. When this occurs, it helps to realign any disorganized fibers in the direction of the tension. This realignment is what helps to rehabilitate scarred tissue back to health.

Abnormally tight calves and Achilles tendons can cause: plantar fasciitis, shin splints, Achilles tendinosis, and calf muscle strains.

Tight hamstrings and hip flexors often cause strains in these muscles. A tight iliotibial band is commonly seen in runners suffering from IT band friction syndrome.

There are many different types of stretches and it can be confusing to know what to do, when to do it, and how to do it. Whole books have been written on this subject, so I want to condense the information for you.
You may have been taught to stretch in gym class years ago and this may have consisted of bouncing in and out of a stretched position. This is ballistic stretching which does not allow your muscles to adjust to, and relax in, the stretched position. Ballistic stretching should be avoided because it can lead to injury.

**Recommended types of stretching:**

1. **Active stretching** increases active flexibility and strengthens the muscles. Many of the movements found in various forms of yoga and Pilates are active stretches. Active stretching should be performed on warm muscles and can be the perfect compliment to your running routine.

2. **Passive or relaxed stretching** is also beneficial. Slow, relaxed stretching is useful in relieving spasms in muscles that are healing after an injury and this is the first type of stretching used on an injured area. Obviously, you should check with your doctor or physical therapist first to see if it is okay to attempt to stretch any injured muscles. Relaxed stretching is also very good for "cooling down" after a workout and helps reduce post-workout muscle fatigue and soreness.

3. The final type of stretching that is useful to the runner is **dynamic stretching**. It consists of controlled leg and arm swings that take you gently to the limits of your range of motion. An example of dynamic stretching would be slow, controlled leg swings, arm swings, or torso twists. Dynamic stretching improves flexibility and is quite useful as part of your warm-up before running. Dynamic stretching exercises should be performed in sets of 8-12 repetitions. Be sure to stop when and if you feel tired.

**Stretch all Muscle Groups**

**Quadriceps Stretch:** The quadriceps is the muscle in the front of the thigh which is 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.
**Hamstring Stretch:** 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.

**Piriformis Stretch:** The piriformis muscle is located deep in the buttocks and is responsible for lateral (outward) rotation of the hip. Although runners run straight ahead, keeping the piriformis muscle loose is important for overall flexibility.

**Gastrocnemius Stretch:** The gastroc muscle is located in the back of the calf. It is the calf muscle that actually propels your leg across your grounded foot while running.

**Soleus Stretch:** 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.

**When to Stretch?**
If you've warmed up your muscles properly, stretching before you run can be safe and effective. Some people say it has saved them from injury; others say it helps them run smoother. Then again, some runners would rather just jump straight from the warm up into the workout, saying they lose momentum if they stop to stretch. With the proper warm up, dynamic stretching before a run can be beneficial.

As usual, when you stretch will depend on what works for you personally. However, there are a few points that hold true for everyone who stretches...

**Don't forget the Warm Up and Cool Down!**
The warm up and cool down should not be optional in your running routine. Cold muscles are at the highest risk for injury. By increasing the temperature of your
muscles, they will be more flexible and have an increased speed of motion. Warming up can loosen your muscles and soft tissue by as much as 20 percent.

The cool down allows blood to continue flowing through your muscles, working its way more slowly from a high level of exertion to its normal resting condition. These two simple additions to your work out can help lessen and maybe even prevent soreness and irritability after a run.

**Stretching Guidelines**

1. Never stretch cold muscles. Always warm up by walking or slowly jogging for 5-10 minutes. Better yet, save your stretching routine for after your run. Stretching is important during your warm-up, before you run, because it increases blood flow to the muscles. But stretching during your cool-down may be even more important. After running, stretching helps to remove lactic acid from the muscle, which in turn reduces muscle soreness. That promotes better flexibility. Stretching afterwards also will help you relax.

2. Don’t force a stretch. Stretch to the point of mild, even tension, never pain or muscle trembling. While stretching can promote flexibility, stretching too far actually can damage the muscles—particularly if you’re recovering from an injury. A healthy muscle can elongate up to 1.6 times its length but generally doesn’t respond well to that much stretching and may result in a muscle strain or tear.

3. Don’t bounce (ballistic) while stretching. Holding your stretch in a static (still) position works best.

4. Breathe comfortably (don’t hold your breath) and let the muscle group relax.

5. Hold each stretch for 30-60 seconds. Don’t hurry through the routine.
6. Ease into a stretching routine- don’t try to do too much, too soon; listen to your body and don’t try to compete with others.

7. Check with your physician or therapist before stretching injured muscles.

8. Find a stretching routine that works for you. There are some great yoga stretches for runners on YouTube and Runner’s World.

Now you know the when, why, what, and how of stretching. Use it as an integral part of your marathon training. I have always taken time for stretching throughout my 16 years as a runner. For this reason I am probably more limber than most women my age and have avoided muscle injuries.
Chapter Eleven

Eating to Fuel Your Body

The human body is a marvelous organism dependant on regular food consumption. I know that I certainly love to eat. Many runners would attest to that fact that one thing that keeps them running is so that they can eat what they want. Somehow logging that weekly mileage makes me feel less guilty about loving chocolate.

A long distance runner has an increased need for calories to provide necessary energy. But what kinds of food should the runner choose? Is running an excuse to eat whatever you want? Can you actually gain weight by running? These are just a few of the questions that runners frequently ask.

The foods we eat contain a combination of these components: carbohydrates, proteins, fats, vitamins, and minerals. Having the right ratio of these nutrients can add to the function of your body. Thoughtless eating can damage your health and lead to unwanted weight. It’s like the old analogy of your car. Put low octane gas in an engine that needs quality fuel and you’ll decrease its performance. Neglect the maintenance your car needs and you’ll pay the price.
Generally, runners should consume approximately 60-65% of their calories as carbohydrates. Carbohydrates provide a readily available supply of energy. Our bodies operate more efficiently on carbohydrates than it does on proteins and fats. Carbs are easier to convert into glucose which is what the brain utilizes for energy.

Protein should make up 15-20% of your caloric intake. Protein is used for energy and rebuilding damaged muscle tissue. The runner should consume 0.5-0.75 grams of protein per pound of body weight per day. Low-fat and low cholesterol protein sources are best.

Fat should make up 20-25% of your diet and should be consumed in forms that are low in saturated fat and cholesterol. Good sources of healthy fats include nuts, oils, and cold-water fish which contain Omega-3 fatty acids.

So, what kind of foods are the best fuel for your body? There are multitudes of diet books, cook books, and food plans available. Certain foods go in and out of fashion. The bottom line for me is eating real foods. In general, avoid foods that come from a box and have long lists of ingredients that you can’t even pronounce.

If you don’t know what’s in the food, maybe it shouldn’t go in your body. Another negative aspect of prepared, boxed foods is that they often contain a high percentage of sodium. That’s right, too much salt! It’s better to be able to control the amount of salt you put on the food yourself.

I’ve heard many nutritionists advise people to shop the perimeter of the grocery store. The perimeter is usually where the fresher, more natural foods are kept. These items usually require refrigeration and have a shorter shelf life (because they are alive). Choose lean meats, low-fat dairy products, whole grain bread and cereal products, and fresh fruits and vegetables. Yes, it does take a little more time to prepare these foods, but you may save yourself from years of poor health.

I recently saw something that looked like strawberry soft-serve ice cream in Time Magazine. It wasn’t until I read the caption that I found out it was actually the raw meat product used to make chicken nuggets! This underscores the point that if you don’t recognize what it is, maybe you shouldn’t put it in your body.
There have been numerous experiments that track how long it takes for
McDonalds “food” to go bad. In one particular example the food was kept for
several months without it showing signs of going bad. Food that simply fossilizes
is not something I want to consume on a regular basis. If you eat fast food
regularly I’m certainly not condemning you. However, I’d encourage you to watch
the movie, Super Size Me, so that you can be informed on what you may be doing
to your body. Having knowledge can empower you to make good health
decisions.

As you start to run longer distances many people find that their appetite
increases. This is certainly the case for me. If I’m not careful about the amount
and type of food I eat, it is easy for me to start putting on weight. It can be very
discouraging to work hard and be faithful with your training routine only to find
the number on the scale going up. If this is something that you’re dealing with
don’t panic. Making a few tweaks in your diet can halt the weight gain and will let
your body settle into a healthy weight.

**Dietary Tweaks:**

1. Large portions are not your friend. We live in a society where “bigger is
   better.” Our rising obesity epidemic is testimony to that. It’s okay to enjoy
   your favorite foods in moderation, just know when to stop. People from
   France actually consume foods that we would consider “sinful.” However,
   they have a lower rate of obesity. There are no forbidden foods. Just use
   moderation and common sense. Don’t supersize it! Divide your plate into
   fourths. One fourth should be a lean protein, one fourth for your
   carbohydrate, and two-fourths for vegetables and fruits.

2. Eat a large breakfast. We live in a fast paced world. It can be tempting to skip
   breakfast or just grab something fast and sugary to start the day. This will not
   work in your favor in terms of weight control or improving your running
   performance. Multiple studies have shown that people who eat breakfast
consume fewer calories during the remainder of the day and actually keep the weight off. Start your day off right.

3. Don’t eat in the evening. Chances are that if you eat in the evenings you are not making the healthiest food choices. Most night eating is done in front of the t.v. and you may not be thinking about the amount you are eating. Try to not eat anything 3 hours before bed. Not only will this decrease mindless eating it will lead to a better nights sleep. Your body will be able to focus on the important job of cell rejuvenation instead of doing more food digestion.

4. Don’t drink your calories. Many people don’t realize how many calories they are consuming each day just from their drink choices. Add up the calories in your favorite coffee drink, soda, energy drink, or alcoholic beverage. Chances are you may have pinpointed one major cause for your weight battle. It can be hard to wean yourself off these drinks. At first try replacing them with low-calorie substitutes. Best case scenario: drink water! Another great choice is iced green tea (the unsweetened variety). It can take some getting used to but is full of health benefits like anti-oxidants and a natural source of caffeine. Brew up a big batch to keep in your fridge, fill up a water bottle to take with you, and you’re good to go.

5. Keep a food journal. If you’re still puzzling over the reason why you’re struggling with your weight keep a food journal. For three days write down everything you eat and drink along with the amount and when you consumed it. This will reveal trends in your eating habits and can be quite revealing.

I’ll talk more specifically about what to eat before, during, and after running in the chapter on Conquering the Long Run. You will also enjoy the guest chapter by Ben Greenfield, the Get Fit Guy, on proper nutrition for long distance runners.
Chapter Twelve

Staying Injury Free

My back went out while training for my first marathon. I can clearly remember my husband helping me hobble into the chiropractor’s office. Fortunately, I was able to finish my training but I learned a valuable lesson. In marathon training you must proactively guard against injury.

The truth is, if you run enough, at some point you will deal with injury. Hopefully you will deal with it early. Many runners stay in denial too long before going to the doctor.

If you decide to train for a marathon I can’t guarantee that you will not be injured. But I will give you some proven prevention strategies. The ever quotable Benjamin Franklin said, “An ounce of prevention is worth a pound of cure”.

Before you learn about prevention you need to know about the most common cause of running injuries . . . overtraining. Overtraining is where your exercise level is too much for your body to deal with.
Signs and Symptoms of Overtraining

- Decreased appetite
- Heavy legs
- Chronically sore muscles that may be sore to the touch
- Increased pulse rate
- Increased susceptibility to illness
- Sleep problems
- Decreased sex drive
- Fear of training and trouble pushing yourself

If you notice any of these symptoms it may be time to evaluate your current level of training and take an extra rest day while decreasing your exercise intensity.

Each person has a running "threshold" that when crossed increases their chances of injury. Know your threshold and don't push above it. If you are a new runner remember that you are at greater risk. Make sure you've built a solid running base and that you aren't increasing your mileage too quickly. Slow and steady wins the race. Remember, overtraining significantly increases your risk of injury.

Other common causes of injury include:

- Sudden changes in routine
- Lack of rest between high intensity workouts
- Sudden increase in running distance
- Workouts that are too hard
- Changes in running surface
- Worn out shoes
Key Prevention Principles

After the ordeal with my back I knew something needed to change. Unfortunately, the training plan I was following did not give me the critical information that could have kept me from making dumb mistakes like overtraining. I didn’t have the money to hire a running coach. So I decided to do my own research to find out how to stay injury free when preparing for one of the hardest challenges on earth.

I have adhered to the following principles methodically. I have also talked about them on my podcast -though I have never shared the complete list. I call them “principles” but to me they are more like maxims or rules.

1. **Know your limits.** Don’t get overconfident. Maybe you’ve arrived at the place where running has become very rewarding. Resist the urge to do too much, too soon. Humans have a hard time finding balance in life. Be sure to increase mileage gradually even if you feel great. Pay attention to the following rule: Don’t add more than 10% to your mileage per week.

2. **Listen to your body.** Many new runners (and a few veterans too) have difficulty with this concept. It can be hard to find the right balance between stopping for every hangnail and crawling home in pain. There is some discomfort associated with running. This is especially true if you’re increasing your distance or pace. You need to be able to differentiate between discomfort and pain. If you experience atypical pain (anything that is sharp, nagging, or forces you to change your running form) take 3 days off. Do some light cross-training that doesn’t aggravate the painful area. On day 4 try an easy run. If that goes well, gradually get back into your running routine.

3. **Check your running form.** Poor form can decrease efficiency and increase your chance of injury. Many injuries are a result of habitually overstriding. Shorten your stride by 10% and try to land more softly. Review the chapter on running form for more details.
4. **Use strength training to balance the body.** If you use the same muscles over and over while neglecting others you can develop muscle imbalances. Typically runner’s hamstrings and calves are strong while the front of their shins and quadriceps muscles may be weak. Focus on hip strengthening exercises to increase leg stability and develop a core training routine. A few exercises to get you started are squats, lunges, calf raises, and planks. Do 3 sets of 8-10 repetitions to get started and gradually increase the reps. As you get stronger hold dumbbells to increase the challenge.

5. **Use the RICE Formula:** RICE stands for: Rest, Ice, Compression, and Elevation. This is what it looks like in practical terms. Sit or lay down on a comfortable surface. Wrap the affected area with an ACE wrap or compression bandage (just don’t cut the circulation off). Prop the affected area up on pillows so that it is above the level of your heart. Place an ice bag (a bag of frozen dried rice or frozen vegetables from the freezer works too) on area for 15 minutes. Repeat this procedure 4-6 times per day depending on extent of injury. This will help relieve pain, decrease swelling, and protect damaged tissues.

6. **Evaluate your running surfaces.** Ask yourself some questions. Have you been running on a different surface? Are you doing more hills? Try to run on a level surface to avoid injury. The only way to accomplish this may be to use the treadmill or track. Most roads are highest and most level in the middle and slope down toward the ditch to promote water drainage. A cambered road (slanted) can lead to leg deficiencies because your right leg is more elevated than your left leg.

7. **Don’t race or do speed work too often.** Frequent racing can increase injury because you often push yourself harder than normal. You get caught up in the spirit of the competition and after the race you have the “I probably shouldn’t have done that” moment. Speed work also challenges your muscles more and shouldn’t be done more than once a week. Make sure you take the time to recover between hard efforts. Variety is the spice of life.
8. **Stretch after you run.** The best time to stretch is when your muscles are warm. Focus on stretching each muscle group including the hamstrings, hips, calves, and quadriceps. Consider cross-training with yoga or Pilates to increase your range of motion, agility, flexibility, lung capacity, endurance, and strength. The chapter on Stretching will give you detailed information on this important topic.

9. **Practice focused cross-training.** Many runners make the mistake of only running for exercise and run the risk of overuse injuries. Cross training helps to provide active rest and recovery for your muscles. This will improve muscle balance and decrease your chance of injury. Pick your cross-training actively wisely by reviewing the chapter on Cross Training.

10. **Treat your feet right.** As a runner if your feet aren’t happy, the rest of you won’t be happy either. Make sure your shoes fit your feet well and have proper cushioning. Ask yourself the following questions: Are my shoes worn out? Do I have the right shoe for my foot type and gait? Visit a specialty running store to have your foot and gait evaluated if you haven’t done so before.

11. **Take one day a week for total rest.** Having a scheduled rest day is not laziness! It will actually do you more good than squeezing another workout in. I recommend using the day after your long run as your rest day. For me this day falls on a Sunday. Be intentional about your running routine and about your rest. This will help relax your body so that it can focus on repair.

12. **Warm up before running.** Always do around 10 minutes of walking or light jogging at the beginning of your workout to warm the muscles up. Cold muscles are more likely to strain or tear. Skipping this crucial warm up period is only asking for trouble.
13. **Keep a training log or journal.** Always have a plan for your workout and then record what you did. Write down how you warmed up, how many miles you ran, your route, the running surface, what the weather was like, how you felt, your time, cool down routine, what you ate, stretching, etc. This may seem like a lot of information but it can be very valuable down the road. By looking back in your running log you can pinpoint any problems before they turn into full blown injury. There are a variety of different ways to keep a training log. You may choose between a paper format or other spreadsheet and online methods.

14. **Nutrition** I’m sure you’ve heard the saying that “you are what you eat.” If you expect your body to perform well for you, make sure you are feeding it quality foods. You will feel best when you get the proper balance of lean protein, low fat dairy, complex carbohydrates, fresh fruits and vegetables, and hydration. Practice moderation when it comes to less healthy options.

15. **Stop at the first sign of injury.** It is better to miss a couple of runs now than push through and have bigger problems down the road. Have the mentality that you are on this running journey for life. You may be training for a big race, but don’t risk major injury. Sometimes you may have to live to run another day. If you are currently injured, think over the previous list to see what may have caused it. Making a couple of changes may get you back on the road to recovery and help prevent future injuries.

In the next chapter I will help you develop the proper mindset for injury prevention. Believe it or not, the mind plays a key role in staying injury free. As I researched this topic I came across 10 laws that are too valuable to not include in this book.
Chapter Thirteen

The Ten Laws of Running Injury

If you were to come to my house you would see that Trevor and I both love books. An entire wall in our living room is covered with bookshelves and it seems our collection is growing every month.

Among my many books on health and fitness I have a 931 page behemoth of a book called The Lore of Running by Dr. Tim Noakes. Many call it “the runner’s bible.” Trevor says it is the most tedious book he has ever seen. I, however, find it very fascinating (probably because I’m a nurse and understand the “tedious” medical terminology).

Dr. Tim Noakes is a medical researcher and veteran of over 70 marathons and ultramarathons. He is an expert in sports medicine, exercise science, and human kinetics. He also knows the training techniques of Olympic runners.

I keep my copy of his book close to my black leather recliner. Let me share a few golden nuggets with you . . . without being tedious.
Four Responses to Injury
Running is a sport of passion and anything that hinders a runner's "fix" is hard to deal with. For this reason, treatment must first begin in the runner’s mind. It starts with acceptance of the facts, careful evaluation of the symptoms, and then focused implementation of treatment.

There are four typical responses to injury (1) Denial- the runner tries to push through the discomfort and won't accept that there is a problem. (2) Anger- the limited ability to run causes negative emotions and the runner may blame their body or someone else. (3) Depression- there is a period of decreased mood due to the interrupted running schedule. (4) Acceptance- the runner accepts the injury, modifies their ambition, and tries to solve the problem.

Law Number One: Injuries Are Not An Act of God.
In other words, you are not selected for injury with no explainable cause. When an injury happens, either an extrinsic (external) or intrinsic (internal) trauma is at work. Extrinsic injuries always happen suddenly (like a hard fall on the pavement) and intrinsic injuries build gradually.

Factors That Lead to Intrinsic Injuries:
1. Your Genetic Build: For example, if you have a larger frame size then you are at greater risk of sustaining an injury. Know your genetic predisposition and plan accordingly.
2. Training Environment: By this is meant the type of surface you run on. Running on concrete is harder on your joints than running on a dirt track.
3. Shoes: Old worn out shoes, poor fitting shoes, or using the wrong kind of shoes can increase risk of injury. See my above chapter on Choosing the Right Equipment.
4. **Methods:** Unwise training methods result in injury. For example, running every day of the week instead of interspersing rest days is poor methodology.

5. **Being Female:** Doctors say that women have more risk of knee injury. Our wider hips increase the hip to knee angle and this can cause knee misalignment.

6. **Being Above Age 24:** Research finds risk of running injury increases for people older than 24. I’m over 24 and female!

7. **Having a High Body Mass Index:** A high body mass index means that your muscles, tendons, joints, ligaments, and bones all have to work harder.

8. **Decreased Level of Fitness:** If you don’t build your running base carefully and you try to do too much too soon you can set yourself up for injury.

9. **History of Injury:** If you have been injured in the past you are more vulnerable in that area

10. **Poor Running Form:** Overpronation (when the foot rolls too much at impact) accounts for 10% of injuries. Overstriding is another example of poor form that can result in injury.

**Law Number Two: Each Injury Progresses Through Four Grades**

- Grade 1- injury causes pain after exercise, pain is only felt for approximately 24 hours.
- Grade 2- injury causes discomfort but not pain during exercise, does not decrease performance
- Grade 3- more severe discomfort and pain which limits training and performance
- Grade 4- pain is so severe that it prevents any attempt at running

Try to catch your injury when it is in grades one or two and implement the simple treatment techniques listed under law number four. If your injury gets to grade 3 or 4 take a break from running and consult with a sports medicine doctor.
Law Number Three: Each Injury Indicates a Breakdown
You need to analyze why it occurred. It may be related to an overly high level of training. Each athlete has a breaking point and increased races, mileage, and intensity will increase risk of injury. Learn and appreciate your body’s threshold. Factors to consider:

- Running surface: the ideal is soft and level (gravel road); concrete, cambered (sloped) roads put more stress on the legs; running up or down hill also increases the chance of injury
- Running form: over striding can cause increase stress
- Shoes: make sure they have adequate support and are not worn out
- Training methods: high running volume and previous injury are the two most important predictors of injury
- Gender: women are at a higher risk of injury
- Novices: running newbie’s who run too far and too frequently in the first three months of running increase their risk of injury; build your running base
- Muscle flexibility: inflexible runners have a higher chance of injury; form good stretching habits

Law Number Four: Most Injuries Are Curable Using Simple Techniques
By simple techniques Dr. Noakes means stretching, strengthening exercises, correcting running form, proper running shoes, cross-training, and taking rest days. Most injuries are curable in 8 weeks.

But why wait until you have an injury to start practicing these techniques? If you start doing them now as prevention, like I told you to do in the previous chapter, you can avoid injury altogether.
Law Number Five: Sophisticated Treatment Methods Are Seldom Needed
Most injuries affect soft tissue structures (tendons, ligaments, muscles) near major joints and don't show up on x-rays. The diagnosis of most injuries is made by hands while carefully feeling the injured site. You will need to describe your training history and methods. 60% of the doctor's success is related to understanding what the injury means to the patient. If the injury persists an MRI may be needed to look at soft tissues.

Law Number Six: Treat The Cause, Not The Effect
The injury will not be cured until the cause is eliminated. If you have constant knee pain and you deal with it by taking pain killers you are not really treating the cause. You need to figure out the source of the pain. Knee pain might be related to your shoes, running surface, or even your hips being out of alignment.

Law Number Seven: Complete Rest Is Seldom The Best Treatment
Rest will cure acute symptoms by not the underlying cause. Rest is "the most unacceptable form of treatment for the serious runner because physical and emotional dependence." The runner will develop overt withdrawal symptoms. They should be advised to continue running only to the point of discomfort. Using cross training as mild exercise may speed healing. If the injury does not respond to the treatment within 3-5 weeks then alarm bells should go off. The only exception is a stress fracture where complete rest is needed.

Law Number Eight: Never Accept As Final The Advice Of A Non-runner
This law would even include advice from medical doctors who are non-runners. Look for doctors who are actually runners with firsthand experience. They must be able to discuss in detail the genetic, environmental, and training factors likely
to have caused your injury. Most importantly they must understand how integral running is to your life.

Never accept advice from someone antagonistic to running. Some in the medical community believe running damages joints and other unproven nonsense. Therefore it might be easy for a non-runner to issue a sweeping mandate like “stop running” or “consider walking instead.”

Lastly, the advisor need not be expensive or advise expensive treatments. After hearing what they have to say, think about the advice and discuss it with other runners.

**Law Number Nine: Avoid surgery**
The only two injuries where surgery is the first line of defense are muscle compartment syndromes, interdigital neuromas, and maybe chronic Achilles tendinitis of six months duration. Low back pain from a prolapsed disc and illiotibial band friction syndrome may lead to surgery if all other approaches to treatment have been unsuccessful. Remember, surgery is irreversible and should only be considered for Grade 3 and 4 injuries. If surgery is required, an orthoscopic procedure is preferable.

**Law Number Ten: Recreational Running Does Not Cause Osteoarthritis**
Osteoarthritis is a degenerative disease where articular cartilage inside the joints becomes thinner until the bone is exposed and rubs together. A runner's risk is no higher than the average population. In fact, a runner usually has higher bone density (decreased osteoporosis). Running preserves joints and muscles. You are at risk of osteoarthritis if you are a smoker, have high blood pressure, have high cholesterol, or are obese.
I hope that you never have to deal with a running injury. But chances are that if you run long enough and far enough you will. Even with all the advancements in sports medicine, the rates of shin splints, knee problems, ankle injuries, and stress fractures are still high. A recent poll by Runner’s World found that 66% of respondents had suffered an injury in 2009.

Fortunately, injuries do not have to end your career as a runner. If you follow the Ten Laws of Running Injuries you’ll be better prepared to prevent injuries and treat them wisely if they occur.

In the next chapter I will tell you how to treat common annoyances like blisters, cramps, and black toenails.
Chapter Fourteen

Blisters, Cramps, and Black Toenails

This chapter is all about annoying little things called “running mishaps”. They differ from injuries in that they are less severe. They are inconveniences. They can be painful and embarrassing but not life threatening.

If you’ve been running for any length of time you’ve probably experienced one of these “mishaps.” Consider them as your initiation into the worldwide club of dedicated long distance runners.

Muscle cramps
Muscle cramps are involuntary contractions of the muscle that may last for some time and be quite painful. The skeletal muscles in the thigh, calf, and arch of the foot are frequently the victims of these cramps (or charley horse). The affected muscle may feel harder than normal or start twitching. Cramps usually occur when there is an electrolyte imbalance or dehydration. Other causes include
muscle fatigue, an inadequate warm up period, and exercising in the heat. Since your muscles are constantly being worked when you run they need the proper amount of fluid and minerals. Think of oil in an engine. If you are dehydrated your blood is thicker and has a harder time flowing to muscles.

To deal with cramps, apply pressure to the muscle for 15 seconds (don't massage), then gently stretch. Repeat the pressure/stretch cycle if needed. Make sure you are adequately hydrated and have the proper amount of carbohydrate and electrolyte replacement (try a sports drink). Start walking when the cramp is resolved, then resume running.

**Blisters**

Blisters are the runner’s top skin woe and are caused by heat, moisture, or friction. The body responds to these insults by producing fluid between the skin layers to protect the area. They can also be caused by wearing the wrong socks or shoes. Blisters often develop over bony areas of the foot. You’ve probably had one or more blisters before.

Prevention is the best defense against blisters. Use petroleum jelly or a body glide product on areas where you are prone to blisters (bony surfaces like heels and toes). Make sure you are wearing socks specifically for running or walking. Tube socks and socks made of cotton should be avoided (cotton retains moisture).

Some runners like to wear two thin pairs of socks to reduce friction or they try the toe socks. If your socks get wet consider changing them ASAP. Make sure you are wearing shoes that fit properly (shop in the afternoon when feet have swelled). There should be a half-inch of room between your longest toe and the end of the toe box. Studies show that fewer than 50% of runners are wearing shoes that fit correctly.

If you are racing and feel a blister developing, keep going until you reach the next aid station. If you can't deal with it right away try adjusting your shoe laces.
Tightening the laces might help stop heel slippage and loosening the laces might take pressure off of "hot" spots. If you are out for a training run, call it quits for the day. Preventing a blister can save you from having to curtail your running to get it healed up.

To treat a blister, cover the area with a band-aid or moleskin. Try not to pop it unless the area is huge and prevents you from walking. I heard from a listener who developed a 4 inch by 4 inch blister on the bottom of her foot. In cases like that take a sterilized needle and make a small hole along the edge of the blister. Allow the fluid to drain out, wipe it dry with a guaze pad, and apply antibiotic ointment and a dressing.

**Chafing**
Chafing is the runner’s number two skin woe. It is caused by skin to skin and skin to clothing rubbing that causes a red, raw rash that can sting and bleed. I think that probably every distance runner has probably experienced this phenomenon.

Moisture and salt on the body (hello sweating) can make it worse. Underarms, inner thighs, along the bra line, and nipples are the most vulnerable spots. After my first marathon I didn't realize I had severe chafing until I got in the shower and the warm water hit my back (thanks sports bra)-ouch!

To prevent chafing, wear moisture wicking gear without seam or tags that has the correct fit. Too much material can cause irritation and a too tight garment can dig into skin. Apply Vaseline, sports lube, bandaids, or NipGuards before you run to any vulnerable area.

If you get signs of chafing, wash with soap and water and apply an antibacterial ointment and light bandage. Make sure to keep your skin moisturized as dry skin chafes more. If you are wearing the right clothing and applying sports lube and still experience the problem see your doctor. You could have a fungal infection.
Side Stitch
A side stitch is a cramping of your diaphragm or abdominal muscles (muscles that control breathing). Side stitches may happen during exertion because the breathing muscles are contracting (shortening) frequently but are not fully lengthened (like when you fully exhale).

To get rid of a side stitch, notice your foot fall pattern and then switch your leading foot. If that is ineffective, stop running. Put your arms above your head and bend to the side opposite of the stitch. Exhale forcefully and fully all air in the lungs several times instead of taking panting breaths. Start walking again and then resume running. Work on taking deeper breathes and exhaling fully instead of taking panting breaths.

Ankle Turn
Imagine this. You’re running outside on a nice summer morning happily enjoying the scenery. You don’t notice the pothole in the road until it’s too late. Your ankle wrenches painfully as you land on your foot wrong. What do you do?

Well, first, stop to assess the situation. You should stop running altogether if you experience severe pain. Otherwise, walk until it feels comfortable again and then resume running.

If you experience continued pain, swelling, or bruising after you get home, use the RICE method (rest, ice, compression, elevation). You may be dealing with a strain or sprain. Don’t venture out to run again until the swelling goes down and the pain goes away.

Fall
Most runners take a fall every once in a while. You may have been paying more attention to the scenery than where your feet were going. The other day I almost
stepped on a dead possum while running. Fortunately I didn’t fall, but I’ll certainly remember the smell!

A couple years ago I had neighborhood dog following me on my run. It would frequently cut in front of me without warning. During one of these zigzags across my path I tripped over the dog and fell hard on the pavement. The pain was minor and I was glad that it was 6:30 am so no one was around to see my clumsiness.

If you do fall, get up, assess yourself, and keep going if you are not injured. It’s most likely that your pride will be the only thing that gets hurt.

**Stiffness after Stopping**
Try not to come to a complete stop during your run. Walk through water stops during a race and start running slowly again. Be careful about running hard and stopping abruptly before cooling down. This can cause light-headedness, fainting, or blood pooling in the muscles. Always walk for a few minutes at the conclusion of your run or race to allow your body to slowly cool down.

**Runner’s Trots**
Up to 60% of runners admit to being troubled by abdominal cramps or diarrhea during or after running. We know a runner that we'll call "Tim." His name has been changed to protect the embarrassed. While on a 4 mile run recently he was forced to duck behind some bushes to answer the call of nature. He tried using leaves to wipe and when that was ineffective resorted to using his shirt (which did not survive the incident).

The jostling motion of running can irritate some runner's intestines and nerves causing increased mixing of food. This inner turmoil can result in loose stools or excessive gas. The blood is diverted from the digestive tract to the legs while
running and that can cause "dumping syndrome" if there is undigested food present.

To prevent gastrointestinal distress try to eat at least 2 hours before a run. Avoid common irritants like caffeine, artificial sweeteners (mannitol and sorbitol), and milk products which can speed up GI movement. Try to add more fiber to your diet slowly to make yourself more regular.

Avoid dairy products 24-48 hours before a long run or race. Many people have reduced lactase (the enzyme that breaks down milk products) in their systems. If this clears up your symptoms then you'll know that dairy products are the culprits. Also try ingesting a low-residue diet (less fiber) for 24 hours before the race to reduce bulk.

Chronic (ongoing) diarrhea can also be caused by an overgrowth of harmful bacteria in your intestines. Try eating yogurt with active probiotic cultures or take a probiotic supplement to return the bowel flora (the good bacteria) to normal. Try to have a bowel movement before your run or race. Drinking warm water, tea, or coffee and a little light movement may help stimulate your system. If dietary changes aren't effective to prevent this problem take an anti-diarrheal medicine on race morning or before your long runs.

**Blood in urine**

Blood in the urine (hematuria) happens to 20% of runners after a long run. Long distance runners can turn into obsessed urine watchers to monitor hydration status. Often they may observe blood in their urine. This can be caused by the two bladder walls knocking against each other during a run and causing bladder wall bruising.

A way to protect against bruising is not to empty your bladder immediately before running and to run with a half full bladder. The cells in the kidneys or bladder may also leak and allow red blood cells to escape through the glomerular membrane causing blood in the urine. Urine should clear up by 72 hours post run, if not,
seek medical attention. If you notice large quantities of blood in the urine or this frequently is a problem, or the blood in your urine is accompanied by low back pain and fever, talk to your doctor to rule out a more serious kidney problem.

**Leaky bladder**

Leaky bladder or urinary incontinence happens to approximately 24% of women and the problem may increase after childbirth because the pelvic floor muscles are weakened.

To treat and prevent leaking urine, practice Kegal exercises. To perform Kegals, stop the urine stream to get a feel of what the muscle feels like. In the morning before you get out of bed contract the pelvic muscles for 10 seconds, rest for 10 seconds, and repeat 10 times. Try to build up to performing this exercise three times daily. Wearing a tampon during a run may also decrease leakage by causing the pelvic muscles to tighten. If Kegal exercises don't cure the problem then surgery may be the best option.

**Over-Sweating**

Hyperhidrosis or profuse sweating happens when the body's cooling mechanism gets out of balance. The person may sweat even in cool temperatures or when at rest and it can be emotionally triggered by stress. Over sweating is rarely a serious problem medically, but can be embarrassing and difficult to deal with. Prescription strength anti-persperants are available and may need to be applied to feet to decrease blisters during exercise. There are also medications and surgery available for this condition.

On the other hand, too little sweating during exercise can put you at risk for heat related illnesses. Each person comes in on the sweat scale differently. I've mentioned before that I sweat a lot during and after exercise. In fact it’s not
unusual for me to keep sweating for up to 30 minutes after I’ve finished working out!

You may notice that as you become fitter you will sweat more as your body becomes more efficient at cooling itself. Make sure to change out of damp exercise clothes immediately after exercise to prevent overcooling or plugging of pores and bacterial buildup.

**Runny Nose During Run**
Exercise induced rhinitis (EIR) is a very common loosening of mucus during exercise and can be allergy related. It is caused by inflammation of the interior of the nasal cavity (from increased blood flow). It is seen with indoor and outdoor exercise, during hot and cold weather, and can cause reduced air flow through the nose and increased nasal discharge.

My nose tends to run when I do. The problem worsens during allergy season. Learn to carry kleenex, do the snot rocket, wipe your nose on your shirt or gloves, sniff a lot, or take medication if the problem is allergy related. After your run be sure to check in the mirror before going out in public or having your picture taken. I’ve noticed hours later that I had dried snot on my face. Embarrassing!

**Black Toenails**
Black toenails can be caused by ill fitting shoes or a race course with lots of downhill sections. If this happens, wear them with pride. In the future, evaluate your shoe fit and how your toenails are cut. The problem can be worsened by shoes that are too small in the toe box. If your toenails are long they may bump up against your shoe causing trauma.

I can clearly remember having two black toenails after running my first marathon but I didn’t care. I learned to wear them as a badge of honor. If you think they look horrible, paint your other toenails purple, blue, or black to match.
Delayed Onset Muscle Soreness (DOMS)

DOMS is the very common muscle discomfort, stiffness, or pain that comes on 24-48 hours after exercise and that may last for 3-7 days. Intense exercise causes microscopic muscle tears which damage muscles cells causing muscle enzymes to leak into the bloodstream. This is part of an adaptation process and muscles are built back stronger because of the increased demand placed upon them. However, constant DOMS may indicate overtraining.

To prevent muscle soreness always warm up before running and cool down afterward. Be sure to build up the length and intensity of exercise gradually, use weight training to strengthen muscles, and practice Yoga or regular stretching. To treat DOMS use an ice bath within the first 24 hours, apply gentle massage, do light stretching, and use active recovery like walking along with the occasional use of NSAIDs (aspirin, ibuprofen, or naproxn).

Maybe you can relate to my personal stories with these often embarrassing and painful mishaps. It is very likely that you’ve experienced one or more of these “fun” running experiences yourself. You’re in good company if you have. After reading this chapter you will be better prepared to prevent them from happening in the future. It is important to be informed, but also to not take yourself too seriously.
Chapter Fifteen

Safety Tips for Runners

A couple of years ago I was on a morning run in a residential neighborhood. It was a fairly quiet street and I wasn't concerned with the lack of a sidewalk or shoulder. A car approached and I didn't become concerned until I realized that it was headed straight for me. The distracted driver was applying makeup in her rear view mirror and I was forced to jump off the road into the ditch.

My heart was racing after that incident and I hope that the driver used her bathroom mirror in the future for any makeup application. If I was not running defensively that morning my shins would have met the front end of her car. It is scary to think that a careless tilt of the steering wheel can easily alter someone’s life.

Unfortunately, there are many distracted drivers on the roads and runners need to learn how to avoid potential problems and protect themselves. Runner's World found that in 2009 there were more than 20 runners who were killed by cars or trucks.

There is the additional risk of danger from the unsavory human element of society. Female runners have been abducted while out on a long run. It is always important to be alert and aware of potential problems.
**Here are Some Safety Tips For Defensive Running.**

1. **Run with a partner**
   If you can’t run with a partner then at least tell someone where you're going and when you'll be back. Wear ID or put your driver's license in your pocket. Also consider taking your cell phone.

2. **Stay alert**
   An alert runner is a safe runner. Don't wear earphones. If you have to listen to music, keep the volume down and don't put both earbuds in your ears. You want to make sure you can hear the cars coming up behind you, especially if it is getting dark.

3. **Follow your intuition**
   There are lots of weirdos out there so be safe. If your gut is telling you something is wrong, it probably is. Run clear of parked cars, bushes, and dark areas. If the same car drives past you more than once, get the license plate number and car description, make it obvious that you see the car, but keep your distance. If you are confronted run toward a more populated area (generally there is safety in numbers), ignore verbal insults and harassment, and keep moving. Do not stop to approach a car to give directions- try pointing or shrugging your shoulders, keep moving.

4. **Run against traffic**
   That would be the left side of the road here in the US. Always be prepared to move over for traffic. Try to make eye contact with the driver and don’t assume cars can see you, they could be texting, picking something up, putting makeup on, or any number of distracting things.

5. **Be visible**
   Wear white, yellow, orange or other light colors. Wear a reflective vest or headlamp if you run at night. Trevor thinks my reflective vest is dorky but it is better to be dorky than dead.
Running in Hot Weather
Heat and humidity can increase the risk of dehydration, heat cramps, and heat stroke. For those of us who experience hot and humid running conditions during the summer, here are a few hot weather safety tips.

1. Be sure to check the heat index which takes into account the temperature and humidity level.
2. Consider running early in the morning (which is best) or in the evening to avoid the hottest time of the day (10am-4pm). Try to run in a shaded area.
3. Stay hydrated. Avoid caffeine and alcohol which have a diuretic effect.
   Consume 16 oz. water an hour before your run. Drink water or a sports drink during a run over 30 minutes, and drink 16 oz + after your run. Obey your thirst and be sure to drink when your mouth feels dry. Consider a sports drink to replace salt and other minerals (electrolytes) during a long run.
4. Wear light-colored clothing which will reflect the sun (dark colors absorb light). Make sure you wear loose fitting, breathable, synthetic fabrics, and avoid cotton. Wear a broad brimmed hat and sunglasses.
5. Apply sunscreen with SPF 30+ with UVA and UVB protection that is waterproof to any exposed skin. Use SPF lip balm.
6. Don't push the intensity of your workout which could lead to exhaustion and dehydration. Don't run long distances alone.
7. Know the signs of heat related problems discussed in Appendix B

Cold Weather Safety
It is possible to enjoy running outside during the winter. Cold weather can be depressing if you’re stuck inside all the time. Running can be a great way to get out of the house, boost your mood, increase your energy level, and stay in shape.

However, you need to be more careful to have a safe and enjoyable running experience in cold weather. Know what temperature or weather condition is going to not make the run beneficial for you anymore. This may be the time to
take a rest day, hit the treadmill, or do some cross training. Check out the following tips:

1. Talk to your doctor about any medical concerns that may be exacerbated by the cold. Frigid air can cause problems for some people with asthma, other lung conditions, and chest pain.

2. Pay attention to the temperature and wind chill factor. If the wind is blowing, it's not going feel like the temp registering on your thermometer. The temperature plus the wind chill is going to be what your exposed flesh actually experiences. See the following chart (all degrees in Fahrenheit).

Wind Chill Factorization Table

<table>
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<th>Temp</th>
<th>50</th>
<th>40</th>
<th>30</th>
<th>20</th>
<th>10</th>
<th>0</th>
<th>-10</th>
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<tbody>
<tr>
<td>5 mph wind=</td>
<td>48</td>
<td>37</td>
<td>27</td>
<td>16</td>
<td>6</td>
<td>-5</td>
<td>-15</td>
</tr>
<tr>
<td>10 mph wind=</td>
<td>40</td>
<td>28</td>
<td>16</td>
<td>4</td>
<td>-9</td>
<td>-21</td>
<td>-33</td>
</tr>
<tr>
<td>15 mph wind=</td>
<td>36</td>
<td>22</td>
<td>9</td>
<td>-5</td>
<td>-18</td>
<td>-36</td>
<td>-45</td>
</tr>
<tr>
<td>20 mph wind=</td>
<td>32</td>
<td>18</td>
<td>4</td>
<td>-10</td>
<td>-25</td>
<td>-39</td>
<td>-53</td>
</tr>
<tr>
<td>25 mph wind=</td>
<td>30</td>
<td>16</td>
<td>0</td>
<td>-15</td>
<td>-29</td>
<td>-44</td>
<td>-59</td>
</tr>
<tr>
<td>30 mph wind=</td>
<td>28</td>
<td>13</td>
<td>-2</td>
<td>-18</td>
<td>-33</td>
<td>-48</td>
<td>-63</td>
</tr>
<tr>
<td>35 mph wind=</td>
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<td>11</td>
<td>-4</td>
<td>-20</td>
<td>-35</td>
<td>-49</td>
<td>-67</td>
</tr>
</tbody>
</table>

3. Dress in layers and avoid overdressing. A good general rule is to dress as though it is 20 degrees warmer outside. Start with a thin, sweat wicking layer like polypropylene. Avoid cotton as it will trap the moisture on your body. Use a breathable nylon or Goretex outer layer and if it's really cold consider a middle layer of fleece.

4. Protect your hands, feet, and head. For your hands, mittens are best to keep fingers warm. Consider adding a heat pack for really cold days. For your feet, use a thin wicking sock liner under wool socks, make sure your shoes are not too tight for thick socks. For your head, wear a stocking cap
with ear protection and consider a mask or scarf to warm the air on extra cold days.

5. Watch for these danger signs: **Frostnip**- ends of fingers, toes, ears, and nose can be chilled, the skin will feel cold and somewhat stiff; get inside and warm area slowly. **Frostbite**- monitor fingers, toes, ears, and nose for numbness, pale color, hard or stiff skin; get inside and slowly warm area in a bath of 104-108 degrees, do not rub; if numbness persists seek medical attention immediately. **Hypothermia**- dangerously decreased body temperature; signs include increased shivering, decreased coordination, slurred speech, fatigue; get out of wet or damp clothes immediately after run, seek medical attention.

6. Don't forget sunscreen and lip balm. The sunshine and glare reflecting off the snow can cause sunburn. Consider a pair of polarized sunglasses for bright days.

7. Dress for visibility. Wear bright colors to contrast against the snow. If running in low-light conditions wear a reflective vest and/or headlamp. Remember general safety tips and be prepared to move over for cars that might slide on the ice or snow.

8. Be aware of the ice and snow. Snow can mask dips, potholes, ice and other hazardous footing. Consider buying clip-on grips for your shoes if you will be running frequently on ice and snow.

9. Start your run going into the wind so that it will be at your back during your return. Running into the wind while sweaty may cause chilling and decreased body temperature.

10. Stay hydrated. Cold weather can be drying on your body tissues. Hydrate before, during a long run, and afterward with water or a sports drink.

**Dog Safety**

It was a beautiful fall day and I was about a mile into my run through the neighborhood. I was getting closer to a house that had a dog that had been threatening in the past (running up to the edge of his property and barking
menacingly). I crossed the road to avoid a confrontation even as my heart rate sped up.

Instead of stopping at the edge of his property like usual, the dog kept running toward me barking and growling. I slowed to a walk and didn't look at him, but it was to no avail. The dog bit the back of my thigh ripping a hole in my running pants.

Fortunately, he didn't attack further so I got out of there as quickly as possible. When I got home I called animal control. After describing what happened the officer went to the house and impounded the dog to make sure it was rabies free. The outcome was fine and I wasn't seriously injured, but that incident has made me hyper-aware of dog safety. Here are some helpful tips I've found:

1. Dogs are territorial so do not approach them even if they seem friendly, get away from their territory
2. Their prey instinct is triggered by fast movement- slow to a walk, cross to the other side of the street, don't turn around and look back
3. Don't stare a dog in the eyes, this can be seen as a challenge and can cause more aggression
4. If a dog approaches- stop and stand still, don't yell or make sudden movement, in a firm, calm voice say, "NO," "Go home," or "Good dog."
5. If a dog tries to jump on you, turn to the side and push it off with your forearm
6. If you have problems with a particular dog, change your route
7. If the dog gets aggressive try to put an object between you and the dog like a tree, telephone pole, or car
8. Carry pepper spray if local laws allow it and use it if the dog rushes at you barking and growling
9. Remember, you cannot outrun a dog even if you're really fast
10. If you are attacked, curl in a ball and protect your head, face, and neck
11. File a report with your local animal control if you are bitten or attacked

Always run defensively. You may never be ran off the road by a car or attacked by a dog but you need to be ready for anything. If you follow these defensive running tips you should be on your way to a safe and enjoyable exercise experience.
Chapter Sixteen

Conquering the Long Run

The long run is undoubtedly the most important aspect of training for a marathon. There is no way around it, in order to run 26.2 miles, you will have to build up your ability to run long. Like the foundation of a building, a solid running base is the only way to end up with a great product (crossing the finish line).

Marathon training is not something that can be crammed for (remember college tests). You cannot wing it and hope for the best. The way to achieve your goal and be successful is to follow your training program and not cheat yourself out of the long runs.

So what is so great about being on your feet for hours? Becoming a successful runner takes time. The long run builds patience, stamina, and will power. Oprah Winfrey said this after running a marathon, "Running is the greatest metaphor for life because you get out of it what you put into it."

For the beginning runner (and occasionally us veterans too), long runs can be boring and painful. It is important to be prepared with an arsenal of physical and mental strategies that can help you go the distance.
"The long run is what puts the tiger in the cat."  Bill Squires

Physiologically long runs teach your body to use energy reserves from fat storage sites. That's good news for those of us who wouldn't mind getting rid of some fat deposits. Typically your body stores some fuel in the form of glycogen in your muscles, liver, and blood.

The average runner has the ability to store approximately 1800 calories of glycogen. As the duration of your exercise increases, these glycogen (fuel) stores are depleted (enter the fat storage for energy). Over time your muscles will develop the ability to store more glycogen if they know that you are going to use it in weekly long runs. This is why many training programs talk about "carb loading." Carb loading basically refers to taking in increased carbohydrates through your diet over time to teach the muscles to have an increased store on hand.

Another benefit of regular long runs is building the necessary endurance to complete the marathon distance. Endurance running strengthens your heart muscle (it can pump more blood) and opens capillaries to send energy to muscles and flush waste products out of muscles (lactic acid). Your lungs learn to exchange oxygen more effectively. Leg muscles and ligaments are strengthened and the body learns to burn fat as fuel.

Here are some physical reminders for your long runs . . .

**Preparation**

Build your mileage base and don't increase your mileage by more than 10% per week. Have a solid marathon training program and stick to it. Don't get cocky and add more mileage then prescribed, even if you feel good. Make sure you use the day before your long run as a rest day or by doing some light cross training.

The day after your long run should be devoted to rest or light activity. Keep a running log to record distance, time, training surface, clothing, diet, etc. This
information will help you evaluate the success of what you're doing down the road. Use your long runs as a time to experiment and do nothing new on race day. If you find that you're having issues during your long runs, look back in your running log to see what you ate that morning, how much fluid you took in, your time, or weather conditions.

Plan for the weather and dress accordingly. You don't want to be stuck miles from town dressed too warmly and have to carry all that gear home. On the other hand, being underdressed and not accounting for the wind chill can lead to numb legs and ears.

If the weather is cold, wear layers and remember that your body will heat up. Dress as if it is 20 degrees warmer outside. In hot weather don't forget sunscreen, hat, and sunglasses. A nasty sunburn can make future runs way more painful. Runners also have an increased chance of skin cancer, so use sweat-proof sunscreen during every run. Make sure your clothing is comfortable and doesn't chafe.

I learned the hard way and now apply Vaseline beneath the band of my sports bra to prevent raw skin later. Guys may want to tape their nipples to avoid chafing. You'll learn what precautions to take to make those long runs more comfortable. Remember the principles in the running gear section and don't wear cotton for the long haul.

Try to vary your long run route and running surface. Pounding out your weekly long run on concrete can be hard on your body. Ask other runners what routes they use or look online for popular running routes. A gravel or dirt trail can be a wonderful alternative to the street and help you connect with nature.

Don't forget basic running safety. Always let someone know where you're going and when you plan to be back. Take your cell phone with you if possible and carry ID. Wear a reflective vest or other reflective clothing to increase your visibility. Always run into traffic and don't assume that drivers can see you.
Hydration for the Long Run
Drink fluids before, during, and after your runs. If you are going to be running for more than an hour, add a sport drink that combines carbohydrates and electrolytes for fuel. There are different methods of carrying fluids with you during your runs. Some people like to carry a bottle(s) in their hands the entire time (cheapest method). However, from personal experience, I know that your arm can be pretty tired after clutching a water bottle for hours.

Other runners invest in a hydration belt that can be worn around the waist/hip area or a camel back (fluid in a backpack) for maximum fluid carrying ability. You can also plot out your course and leave bottles of water strategically along your route. Just make sure to come back and pick up the bottles later.

One of my personal pet peeves is littering. Littering is ugly and bad for the environment. And have you ever noticed that 99% of the litter is stuff that's bad for you anyway: fast food wrappers, soda cans, cigarette butts, alcohol containers, and candy wrappers. I've never seen a banana peel or energy bar wrapper out there.

If you have great family or friends, have them bring you fluid or food at a certain point. One marathoner I know has a brother who rides his bike alongside him and provides physical as well as mental support.

The important thing is to drink. I like to drink a couple of ounces every mile or so. This will prepare you for the race and get you used to taking in fluids and calories regularly. If you will be running for 90 minutes or more, consider eating on the run. This may be the time to try out energy gels, chews, or other forms of concentrated carbohydrate calories.

Some runners like to eat their sugars more naturally and carry trail mix or dried fruit. It might be helpful to research what form of sports drink and energy gels will be available on race day and practice with those. You don't want to risk an unpleasant intestinal reaction during your race. If you're having stomach issues on your long runs try changing to a different sports drink and experiment with easy to digest foods before the run.
In general, you want a high carbohydrate source of energy with limited fat and protein. I remember an unpleasant long run I had. I was training for my first marathon (and doing most things the hard way). I didn't get my long run in on Saturday because of the rainy weather, so the only time I could fit it in was on Sunday afternoon.

I was hungry after church and made the mistake of eating chicken, mashed potatoes, the whole works for lunch. I thought that an hour should be plenty of time to let my meal settle. Boy was I wrong! About 6 miles into my 18 miler I was having serious stomach cramps. I ended up throwing up my lunch on the side of a country road. It sure tasted worse the second time!

Some people find that a bagel w/ jam, a bowl of oatmeal, or an energy bar is perfect for before the long run. You need to refill those energy stores to help with muscle repair.

If you are having trouble with "bonking or hitting the wall" at some point during your run, this is probably the point where your muscle stores of glycogen get used up. You need to focus on taking in more carbohydrate calories regularly during the run. Remember, long runs are for practicing and you shouldn't be doing anything new on race day.

**Finding the Right Sports Drink for Your Long Runs**

If you go to the grocery store there are tons of sports drinks to choose from, each boasting that they will improve your exercise performance. Marketing and packaging aside, what should you look for in a sports drink? Sports drinks are necessary for runs of over 1 hour where you need carbohydrate calories and electrolytes. The first purpose of a sports drink is:

1) Hydration- will provide the fluid your body needs to prevent dehydration
2) Calories- calories in the form of a simple carbohydrate (sugar) provide easily accessible energy; adding carbs to the drink allows it to be absorbed by your system 30% faster than water. You should look for a drink that has
14-20gm of carbs or 40-60 calories/8oz serving (many drinks will be packaged in 32 oz bottles). Don't choose the zero calorie option as it won't give you the energy you need.

3) Electrolytes- these minerals are lost in sweat and need to be replaced; choose a drink with sodium (110mg/serving) and potassium 35-45mg/serving.

Finally, make sure the flavor is something you enjoy. If the taste makes you sick or leaves a bad taste in your mouth, look for something else. Most races choose highly popular lemon-lime.

**Running Form and Pace**

Don't forget the principles of good running form. This will become even more important as you're running for hours. Tense hands, arms, or shoulders can translate into energy drain and a very sore back. Your arms and elbows will become stiff after keeping them in the same position for so long. Shake out your arms and shoulders every couple of miles or when you notice tension.

Make sure your head is up, you back is straight, your stomach in, and that you aren't over-stridng. Consistently using good form will translate to a much more comfortable experience.

The long run is the time to go slow and steady. Many running resources talk about doing your long runs at a pace of 1 to 1 1/2 minutes slower than your normal pace. Make sure you get in a comfortable sustainable pace. Remember, you have to keep going for a long time and that this isn't a race. This is the preparation.

Keep your heart rate at around 70-75% of your maximum heart rate. Make sure your breathing is even, there should be no gasping, wheezing, or huffing and puffing. Don't be afraid to take walk breaks if you need to.
Some experts (Jeff Galloway and Hal Higdon) recommend that beginners walk for a minute every mile and say that you should take walk breaks before you need them. I personally find that it is hard to start running again after walking, but you need to find what is comfortable for you.

I do walk for a few seconds during water stops during a race. The key is pacing yourself so that you can go the whole distance. If you are running out of energy midway through it could be because you started out too fast or that you aren't getting the calories you need to keep the engine going.

**After the Long Run**

Make sure that you begin the refueling process within 30 minutes after your run. Your food choice should be a combination of carbohydrates and proteins. Many people recommend a glass of chocolate milk. The University of Indiana studied a group of runners and cyclists and found that chocolate milk was just as effective for recovery as many of the expensive recovery drinks.

My personal post-run favorite is a banana w/ 2 T. peanut butter. You will probably be ready to eat a more substantial meal around an hour after your long run (sometimes you may not feel hungry at first or even slightly nauseated).

The day before your long run should be a day of rest or light cross training. Make sure you get a good night sleep and are well rested. The day after your long run should also be devoted to rest. A short walk or bike ride is fine to loosen up your muscles, but you shouldn't be out doing a serious workout.

Always make sure you stretch after your run. Focus on your hips, glutes, hamstrings, quads, and calves. Develop a stretching routine that you perform after every run. This is one key to staying flexible and injury free. I hope that these tips on a physical act of running long have been helpful to you. Every person reacts a little differently to running long and the key is to find out the right combination for your body. In the next chapter you will learn mental strategies for making your body move.
Chapter Seventeen

Mental Strategies for Conquering the Long Run

Preparing for your marathon is definitely a physical challenge, but the mental aspect of marathon preparation is often overlooked. Your body will not be prepared to go the distance unless it has the full support and encouragement of your mind and will. Having an arsenal of mental tools is vital because the race is at least 50% physical and 50% mental. Training the mind is vitally important and can be attained through visualizing success, affirmations, and blocking the negative.

"Finishing a marathon isn't just an athletic achievement. It's a state of mind that says anything is possible." John Hanc

Some of the biggest challenges to getting long runs in is finding the time for them, balancing family commitments, and motivation. One of the most helpful things to do if you are training for a marathon is to put together a support system. This may include your spouse, kids, other family member, and friends.

It does take time to train for a marathon and it will mean sacrificing some time on the weekend to do your long runs. I know that I couldn't do my training without such a wonderful husband. I have to coordinate my long runs with him to make
sure he can watch the kids. Some days I have to do my runs on the treadmill to get my miles in.

If you are motivated, you will find a way. Remember, that having healthy goals and a healthy body is going to be such a benefit to people around you. Yes, your long runs may take some time away from your kids. But in return, you are going to set a healthy example for them and be a much happier person. I want my kids to know that exercise is a part of daily life, and that everyone is much happier if I get my run in. You know the old saying, "if mama ain't happy, ain't nobody happy."

Before undertaking a marathon there are some internal characteristics that you must possess. The best training program or coach in the world will not get you to the finish line unless you are internally motivated. In addition, you must develop self-discipline and time management skills.

Training for a marathon and long runs in particular are not easy. If running a marathon were easy, everyone would be doing it. Facing the challenges and difficulties will make your accomplishment all the sweeter in the end. Emil Zatopek, winner of four Olympic gold medals said, "We are different, in essence, from other men. If you want to win something, run 100 meters. If you want to experience something, run a marathon."

**Goal Setting**

Goal setting is important before undertaking a marathon. You must decide what your payoff factor is. Make sure you've built a solid running base, make sure you can commit the time for training, and schedule your race. You are more likely to accomplish your goals if you are specific, write the goals down, tell others about them, and set a time frame.

For your first marathon, setting a time goal is not of great importance. Your initial goal should be to finish and stay injury free. It is good to know what your running pace is based on your long runs to project a finish time. But at first, don't get
hung up on finishing within a certain time frame. You are embarking into new territory, so have a proven strategy and remember the story of the turtle and the hare. Slow and steady finishes the race most successfully.

Muhammed Ali said, "Champions aren't made in gyms. Champions are made from something they have deep inside them- a desire, a dream, a vision."

Mantra
In addition to goal setting, other important mental strategies include self-talk and imagery. Self-talk involves blocking negative thoughts and replacing them with positive statements. There will be times when you need to give yourself a pep talk (out loud if you need to). Tell yourself that you can handle it and that you can push through your mental barriers. Remind yourself how proud you'll feel when you're done. Find a mantra or short phrase that helps you stay focused and centered. Some examples of a mantra include:

- “One step at a time”
- “Keep running, I'll feel better when I (fill in the blank... have some Gatorade, take a shower, put my feet up)”
- “If I quit now, I'll regret it later”
- “I'm not physically tired, I'm more mentally fatigued”
- “In just (insert time) this run will be finished and I'll be at home (insert favorite activity)”
- “I am fast, I am light, I am strong”
- Or Trevor’s personal favorite, “Pain is Weakness Leaving the Body!”

Running Partner
It can also be helpful to have a running partner or group who will encourage and push you along the way. Knowing that others are going through the same things you are can give you a reason not to quit when the going gets tough. Other
runners find that listening to music or podcasts helps the time pass more quickly and gets their mind off the discomfort. Many of you have said that you listen to our podcasts during your long runs and we're glad to be there for you.

**Visualization**

Visualization or imagery helps build mental confidence and helps eliminate thoughts like, "I should just quit." It helps to mentally break the course into smaller segments and only focus on one at a time. For example, a 20 mile run can be broken down into four 5 mile segments. Don't let yourself get overwhelmed with the entire distance.

Another helpful tool when you hit a rough spot is to imagine the finish line. Envision yourself as smooth, graceful, strong, and relaxed. See the spectators cheering you on and your family and friends proudly watching you run. Think about the time you'll finish in and what it will be like when the medal is placed around your neck.

You can also imagine that you are a world class runner in the lead at the Boston Marathon or the Olympics. Imagine that your running form is smooth and graceful and that you are running effortlessly and are very relaxed.

**Mental Games**

Another way to distract yourself mentally is to play counting games. Keep track of how many cars pass you, how many dogs you see, or how many times you see the color red. I like to look at the houses and landscaping I pass and think about ways that I would improve the property. Make plans for after your run, think about a work project, dream about the future, compose songs, write poetry, think about a future novel you'll write, the possibilities are endless.

As you develop mental discipline during these long runs you'll come to look forward to these opportunities to get in your head and think. Some of my best
ideas and plans have come when I'm out running, free from the distraction of the phone, computer, and other people.

Over time, long runs will help you develop mental toughness, coping skills, and confidence. You'll think, "I just ran 18 miles yesterday, I can do this too." Elite runners say that after they've built up their base mileage it comes down to pushing through excruciating bouts of discomfort. You have to reach inside and find that toughness physically and mentally.

Running great Steve Prefontaine said, "Running gives me confidence." That says it all. We all need confidence to face the challenges of this fast-paced world. Mastering the long run can be one key to improving every area of your life. Utilize these tips, and "Just do it."
Chapter Eighteen

Tapering and Preparing for Race Day

Ask any marathoner what the hardest part of training was and after mentioning the long runs they just might say "the taper." So what is the taper and why is it so difficult?

Tapering refers to reducing your training load for a period of time leading up to your marathon. Research shows that a period of rest before racing increases the athlete’s level of fitness and can boost their performance by 3%.

Tapering was a term coined in 1947 by two coaches of the Australian Olympic Swim Team. Coach Forbes Carlile and physiology professor Frank Cotton found that their athletes performed better when their training was eased up three weeks before the race. Many years later it was found that the same holds true for distance runners.

Resting for a specified period helps the body recover from months of hard training. During this training the body may have been depleted of its enzyme,
glycogen, and hormonal stores. Tapering allows for replenishing these reserves and encourages the repairing of muscle tissue to give that natural resilience back.

Should You Taper?
Owen Anderson, Ph.D., editor of Running Research News, says, "Scientific evidence suggests that temporary training reductions bolster leg muscle power, reduce lactic acid production, and carve precious minutes off race times. In contrast, hard workouts just before a race can produce nagging injuries and deplete leg muscles of their key fuel for running--glycogen."

The usual period of tapering is of 10-21 days depending on the length of the race. A person running a 10k would do better with the shorter time period while the marathoner will want to take advantage of the full 21 days.

So what’s not to love about tapering? Runners may fear and avoid tapering because they are afraid of losing fitness. This is an unfounded fear and the distance runner may have a hard time accepting that sometimes less is more. Because running is a mental and physical discipline, we may go through withdrawal both mentally and physically.

On the physical side of things we fear our muscles turning into mush. Mentally we lose some of our outlet for anxiety. But in truth, a well planned taper can make you stronger physically and keep you from "hitting the wall" on race day.

Most marathon training programs will schedule the last and longest run (the 20 miler) three weeks before your race. The next long run will be of reduced length (10-12 miles) and the final long run a week before the race will be an even shorter distance (6-8).

While your running distances are getting shorter it is a good idea to use the shorter runs to work at running at marathon pace. It's also a good idea to throw in some tempo runs which will teach your body how to pick up the pace and integrate speed. During the last week of your taper is the time to do easy runs.
What Not to Do Before a Race

There are some specific guidelines to help you have an effective tapering period. You don't want to make a mistake in the last few weeks leading up to your race and lose months of preparation. If you are aware of some of the possible things you might experience during the taper it will help to decrease your anxiety.

1) Shoveling in the Carbs

Yes, there is a lot of hype surrounding "carb loading" in the days leading up to the marathon. If you aren't careful, the urge to carb load and the reduced running mileage can leave you feeling heavy and bloated. It is important to focus on good nutrition and possibly drop your calorie intake some. Healthy sources of carbs include brown rice, whole wheat bread, whole grain pasta, sweet potatoes, and quinoa to name a few. Make sure you include fresh fruits and vegetables and keep your fluid intake up to avoid dehydration.

2) Cramming in More Miles

Don't do a long run of more than 14 miles even if you feel good. Stress may make you want to run more and if you feel good the reduced mileage can feel restrictive. But, you've already done the bulk of the work for your marathon. This isn't college where you can cram right before an exam. That probably didn't work very well in college. It is the training you do in the months leading up to the marathon that will help you go the distance. Increasing the number of miles and overall intensity right before your race can actually hurt your marathon experience. Also beware of cross training at too high of an intensity and risking an injury. Save your energy and let your body build itself up in preparation for race day. Make use of your rest days and try to get 7-8 hours of sleep per night (more if you need it).
3) Stressing Out

Don’t stress out over a pressure to perform and be afraid that you won’t accomplish your goal. You can add some tempo runs at marathon pace during your taper. Overall, know that you've worked hard and that you can't control every aspect of race day. Make sure that you don't give in to stress and negative thinking. Know that you can't implement everyone's advice. You will have to run your own race.

4) Obsessing Over Phantom Pains

During your taper a new pain may strike for no reason. Some of this is caused by tissue repair causing cramping and discomfort. We may start to mentally obsess as race day gets closer and magnify any pain that may occur. Instead, think of the discomfort as your body repairing itself. Use this time to take good care of yourself through rest, massage, stretching, and relaxation.

5) Fearing the Unknown

Panic attacks may happen when we start to over think certain aches and pains. We may doubt our ability, have decreased confidence, and fear the unknown. Some good ways to combat these feelings is to collect all the information you can about the race and start to visualize your success. Make sure to break in any new shoes or clothing so that you don't do anything new on race day. Any time a negative thought pops into your mind, replace it with a positive statement. Instead of thinking, "this knee pain probably means I won't be able to finish the race." Think, "This discomfort means that my body is healing itself and preparing to run the full 26.2 miles." Olympic marathoner Deena Kaster says, "I don't believe in fear. I believe in putting in the work." As race day nears, don't let yourself give in to fear!
Getting To the Race

If you will be traveling a long distance to attend a race, make sure you arrive early and give yourself a chance to recover from travel and adjust. This particularly holds true if you are traveling to an international race. Flying long distance is fatiguing and can also lead to dehydration. Make sure you arrive at least 2-3 days prior to the race to let yourself get used to the time zone and get properly hydrated.

Don't spend the day before your race on foot touring the entire city. Use the day before your race to focus on relaxation and enjoyable activities. The same holds true for walking around the race expo for hours. The hard concrete can lead to sore legs and feet. Make sure you wear comfortable shoes in the days leading up to the race. You don't want to risk a pre-race blister or sore spot.

What to Take to Your Race

Before you leave home make sure you have packed the essentials. If you are flying to a race you might want to pack the essentials in a carry on to avoid lost luggage. Make sure you arrive with the following things:

- Racing shoes
- Race day outfit including socks, shorts, and shirt
- Passport and other ID documentation
- Hotel and rental car info
- Event schedule and info
- Credit card and money
- Camera
- Clothes for pre and post race
- Coat, gloves, and hat (throwaway gear if you plan on wearing it at the starting line)
• Rain gear (black plastic bag with a hole cut for your head will work just fine)
• Sunglasses, sunscreen
• Alarm clock
• Safety pins, body lubricant, band aids
• Any medication you need
• Special race drink or gels

What to Eat Before a Race
In the last 24 hours before the race pay attention to what and how you eat. There may be some amazing restaurants in the city you're visiting. Make sure that you don't eat anything unfamiliar in the last 24 hours. There will be time to go whole hog at your favorite eatery after completing your race. Also, make sure not to overload your body with food (even pasta). Eat a normal sized, high carbohydrate meal the night before and try to avoid excess caffeine and alcohol. This can lead to fitful sleep that night.

Other Tips to Get You Ready
1. Trim your toenails a week before the race, getting them too short could causing bleeding and pain while running and leaving them too long can cause blisters or gouge another toe.

2. Prepare your running clothes in advance. Plan and test everything that you plan to wear. Bring "disposable" clothes that you can wear to the starting line to stay warm and discard along the way. Don't worry, these clothes will be collected and donated to a local thrift store.

3. Check the weather conditions and plan to dress accordingly. For cold weather plan on wearing light layers (with clothes to discard if you get too warm). In warm conditions shorts and a singlet or short sleeved tech shirt should suffice along with a hat, sunglasses, and sunscreen.
4. Check the condition of your shoes and laces.

5. Pin your race number to your shirt, attach your timing chip to your shoe, and lay out your watch, chafing products, and race fuels.

6. Plan to have breakfast food available to eat race morning (these may need to be consumed on the way to the starting line if your hotel is some distance away). Don’t assume that your hotel will have something for you to eat or that you’ll have time to stop somewhere before the race.

7. Go for a short easy jog or walk to loosen up if you need to.

8. Stay relaxed by spending time with friends or family, reading, or watching a light movie or mindless TV.

9. Don’t stress about lack of sleep, it’s normal to be nervous and you’ll probably be as rested as everyone else at the starting line. Set two alarm clocks to reduce anxiety that you won't awaken in time.

The tapering period of your marathon training can be a great time to prepare physically and mentally for your race. Knowledge is power. Being aware of some of the pitfalls you might experience will help you avoid them and get to race day healthy and rested.

In the next chapter I will guide you through the race day procedures so you won’t feel like the new kid on the block at your first marathon.
Chapter Nineteen

The Big Day

Race day has finally arrived. The day you have been training for is finally here. You will be ready as long as you have properly followed your training program and tapered successfully. Expect to have some anxiety about the events of this day. Almost everyone experiences pre-race jitters. If you realize that your nerves are normal then you won't give in to fear.

The Morning of Your Race

Make sure you get up early to allow plenty of time to eat, get dressed, use the bathroom (a few times), and get to the starting line. If you will be driving from a distance to the start realize that traffic may be crazy. 15 miles can turn into an hour if you get stuck in slow traffic. I remember one tense morning in Nashville as my husband was attempting to get me to the shuttle bus in time. After getting stuck in a traffic jam we had to reroute to the starting line to make the race on time.

Plan to arrive early, warm up by walking around, hydrate (take a disposable bottle of fluids with you), and make sure your timing chip and race number are secured right. Use a lubricant or anti-chafing product before getting your race attire on. Wear your race gear to the starting line (you may want to wait to put your shoes on until closer to the race).
Eat a light carbohydrate rich meal at least 2 hours before the race. Eat what worked best for you on long run mornings (toast, bagel, oatmeal, banana, etc). Avoid eating anything unfamiliar or high in fat. Try to get your GI tract moving before the race (coffee or tea may work well for this). If you are prone to diarrhea, plan on taking an anti-diarrhea medication before the race. Use the bathroom every time you have the chance leading up to the race (remember, bathroom lines may be long near the starting line).

Know ahead of time if your hotel offers a late check out so that you can get a shower after your race. Some races have showering facilities at the finish line so plan to bring the hygiene products and dry clothes you need if you plan on taking advantage of that. Have a prearranged place to meet your family and friends so that you don't get lost in the post-race crowds. Most races only allow the runner into the post-race food area.

**Getting Into Your Corral**

When you arrive at the starting line, make sure you've positioned yourself into the correct corral. In most large races you will be assigned a starting corral dependent on your projected finish time. This is very important because it can be frustrating for faster runners to have to pass dozens of slower runners in the first few miles.

With the advent of timing chips it doesn't matter what time you cross the starting line because the time that will be recorded is your start time. The gun time is when the race officially starts, but the chip time records the net time of your run, from when you crossed the start line to the finish line.

I did the Country Music Marathon in Nashville some time back and was placed in corral 10 of 30. I could look in front and behind me and see nothing but a sea of runners all united in the same purpose. The sense of energy and excitement is palpable at the starting line. Hearing the starting gun go off and advancing closer to the starting line gets your heart racing and your feet itching to run.

If you are aiming for a specific finishing time it is a good idea to stay with one of the pacing groups. The pacing leaders will carry a sign saying 4:30 for example as the projected finish time. Most pacing groups are very good and will get you to the finish line on goal. It can be motivating to run with these people and it even
develops a sense of community in an otherwise huge race. If you get separated from your pacing group don't panic. Just keep moving forward as best you can. Remember that expectations don't always equal reality. Your goal is to finish the race healthy and strong.

**Race Etiquette**

It is important to be aware of road race etiquette. It is never pleasant to be the recipient of rude running behavior and you certainly wouldn't want to diminish the race experience for someone else.

1. Line up properly in your corral.
2. Don't carry loose change, keys, or other items that might jingle in your pocket. You'll annoy other runners and probably drive yourself crazy too!
3. If you plan to wear headphones or ear buds check to see if they are allowed in the race. Make sure you can hear and are aware of your surroundings. Better yet, forgo the music and experience the marathon with all five of your senses.
4. If you are running in a group, don't run with more than 2 abreast. Make sure to leave room for others to pass.
5. Write your name on your shirt. It will enable others to connect with you more personally. We all like to hear our name and get extra encouragement.
6. Show appreciation to volunteers and supporters by saying thank you.

**Water Stops**

Dr. Tim Noakes wrote his opinion on how much fluid should be consumed for the International Marathon Medical Directors Association. He recommended 400-800 milliliters an hour depending on body weight and conditions. Sports drinks are preferable over water because they enter the bloodstream quickly and provide water, electrolytes, and sugar.
1. Don't drink obsessively several days before the marathon. Drink when you are thirsty.
2. Don't take NSAIDS (aspirin, ibuprofen, or naproxen sodium) before, during, or after your race.
3. Weigh yourself before the race and write the number on the back of your bib.
4. Drink when thirsty and don't force yourself.
5. Decrease fluid consumption if you feel queasy or notice sloshing in your stomach.
6. Choose sports drinks over water.
7. Don't chug fluids after the race. Nibble on food and sip drinks slowly.

Remember Your Form
While you are running remember to check your form occasionally. Having bad form and being tense can cause an unneeded drain on your energy. Make sure your shoulders aren't creeping up toward your ears. Shake out your arms every couple of miles and make sure your elbows are bent at 90 degrees. Keep your back straight and avoid hunching forward. Being mindful of your posture can result in a more comfortable race.

The Mental Challenge
Break the race into smaller segments and have mental strategies to deal with each part. For the first 10 miles start slow and don't worry about people passing you (you might pass them later on). You will feel full of energy, but pace yourself conservatively and save some for later. If you give in to the adrenaline and excitement you may well be visiting the dreaded "wall" later in the race.

Think of the first three miles as a warm up. You are running your own race so stay calm and don't get too emotional. Try not to over think the first 10 miles. Remind yourself of how many times you've gone this distance and that you are well able to handle it.

For miles 11-20 start breaking the race up into smaller segments. To beat boredom and keep your mind occupied you can look at people, enjoy the scenery,
sing songs, talk to other people, count people you pass, etc. This might be a good time to converse with other runners to help pass the time. Stay mentally tough during this time and don't allow negative thoughts to creep into your head. Tell yourself that you are tough. You can do this distance.

From miles 21-26.2 start to think outside the body. This is uncharted territory and it can cause you to become emotional. It is important to ignore the discomfort you feel and replace thoughts of "I can't do this" with "I'm getting tired, but I'm almost there." Replace each negative, self-defeating thought with a positive one. Remind yourself of your training and how you've pushed past other barriers.

Repeat a personal mantra to yourself or dedicate the last few miles to inspiring people in your life. Promise yourself that you'll run to the next mile marker or water stop and then reset the goal once you get there. Pick a runner slightly ahead of you and tell yourself that something bad will happen if you don't stay with them. See how many people you can pass. Pretend you are competing for a prize. Do whatever works at this point to keep going.

The goal is to get to the finish line. Promise yourself ridiculous things to get yourself there. Remember, your body will follow the directions that your mind gives it. Don't ever quit in your mind! As you finish more marathons you will hone strategies that work best for you.

**The Finishing Line**

The finish line is in sight. Everything you’ve been working toward for months will soon be a reality. No matter how tired and sore I am at this point, I can’t seem to keep myself from sprinting across the finish line. It is common to feel very emotional. You’ve just pushed yourself physically, mentally, and emotionally. Don’t be embarrassed if you break down crying or find yourself hugging a complete stranger. This is your moment to enjoy.

Keep moving at the finish line to avoid clogging the way. There will be race volunteers to “herd” you through this area. You will commonly be given a space blanket (to conserve body heat), a medal will be placed around your neck, and the timing chip will be removed from your shoe (unless it’s disposable). When you get to the food area, don't take more food than you can eat. Remember that there are more people coming and save some for the back of the pack runners.
Start drinking fluids immediately and use the bathroom even if you don't feel like going.

If you have any medical issues that need immediate attention head over to the medical area. Each race has a medical doctor and trained staff on site to deal with post-race issues. If someone else tells you that you need to get medical attention, listen to them. Your brain is probably fried and you might not be making the best decisions. Here are some reasons for seeking medical attention:

- Extreme headache and dizziness
- Fainting
- Nausea, vomiting, unable to keep fluids and food down
- Unable to urinate after 6 hours
- Red, swollen, or painful joints
- Unable to bear weight on legs
- Active bleeding

Plan to have someone with you for at least 12 hours after the race. You don’t know how your body is going to react and it's important not to drive or participate in activities that require safety or high levels of attention. It is possible that you will experience zone outs or fainting. Make sure the person has good judgment and will get you medical attention if you need it. Wait several hours after the race before consuming any alcohol. It can be dehydrating, further impair your judgment, and dull your reflexes.

Try to get out of your sweaty clothes as soon as possible to avoid becoming chilled. A dry set of clothes can feel great, even if you haven’t had a chance to shower yet.

Wear your medal all day. You are a winner and earned every second of recognition. Have someone available to take pictures of you after you finish. It definitely won't be a great hair day, but it will be a day to remember.

**Post Race Recovery**

After your marathon I suggest walking around for at least 30 minutes even though you might be sore. If you sit down right away your muscles will start to stiffen up
and you might not be getting up again. Whatever you do, don't lay down, it may make you pass out! Try to stretch within 30 minutes of finishing. If you have to travel after the race, make sure to walk around as much as possible.

After doing the necessary things at the finishing area, grab the first beverage you are handed and start drinking. Many races routinely give out a water bottle at the finish line. While sipping on your fluids head over to the food area. It will be important to start refueling depleted muscles with a food source that includes carbohydrates, protein, and sodium.

The glycogen refueling is best done in the 30-60 minutes post-race. You may feel somewhat nauseated and not feel like solid food, but start eating something anyway. Try a banana, piece of fruit, bagel, cookie, or other easy to digest food. If solid food isn't something you can see happening, get your recovery from a liquid source instead. Try a recovery drink, V-8 juice, or chocolate milk until you can stomach solid food.

It will be important to eat small, frequent meals the rest of the day. Even if you are starving, start small. Don't down a greasy burger, french fries, and milk shake until you've tested your stomach with smaller amounts of food.

After my last marathon I had a banana and chocolate chip cookie in the post-race food area along with a bottle of water. About two hours later my husband and I went and ate BBQ! On the trip home I had a King size Reece's Peanut Butter Cups. Not the healthiest options I know, but I was still in celebration mode!

Continue to sip fluids throughout the day to replenish fluid losses. You don't need to guzzle fluids excessively, but continuing to drink is a good idea. Monitor your urine quantity and color to know if you're hydrating enough. A large amount of clear urine means you should slow down on the fluids. A minimal amount of dark urine mean you need to drink more fluids. You may not feel like urinating after the race due to other discomforts drowning out the message of your bladder. Get to a bathroom and go whether you feel like it or not within two hours. You might be surprised at how much you had stored up and weren't even aware of it.

Within a few hours try to soak in a cold bath for 5-15 minutes to decrease inflammation and speed recovery. Don't jump in the hot tub during the first few hours (that may come later to soothe sore muscles). Even a cool shower if you don't have access to a tub can be beneficial. If you have a particularly sore area
(knee, ankle) be sure to get an ice pack on the area right away. Ice the area for 15 minutes every 2 hours for the rest of the day to decrease swelling.

Take Tylenol if you need some pain relief. Definitely plan on taking it easy the next day. It’s common to be very stiff and sore for 48-72 hours after your race. One key to recovery is to engage in active rest for the week following your race. Do low impact activities for 7 days post marathon and give your body two weeks off from running. Be sure to listen to your body and act accordingly.

Running again too soon is a quick way to get injured. Use a reverse tapering plan to build back up to your normal mileage. Ease back into training and don't plan back to back races unless you are an experienced marathoner. Each person's body handles recovery in a unique way. Make sure you don't set yourself up for an injury by doing too much too soon.

Above all, take the time to enjoy your accomplishment. You've done something that many people never dream of doing. Stay in the moment and avoid looking to the future too quickly. Consider writing about your experience while it is fresh in your mind. No matter how many races you do, the first marathon will be one that you never forget.

Some people find themselves struck by post-marathon blues. You may feel exhausted and depressed in the weeks after your race. You worked so hard and put so much thought, physical effort, and emotion into your training that you may feel empty and wonder what is next. Don't be surprised when this "let down" feeling occurs. It's completely natural, so don't let it get you down.

You may have structured your life around this goal for 4-6 months and had limited time for other social activities and hobbies. Take time to care for yourself and evaluate what goal you should set for yourself next. If the race didn’t go as well as you hoped due to injury, weather, or other problems, take the time to work through your feelings.

It's okay to be disappointed, just don't let it control your life or define you as a runner. If you don't want to do another marathon right away, don't put that pressure on yourself. Focus on a balance of running and cross training activities. You'll feel better about yourself if you stay active and involved in a meaningful pursuit.
Conclusion

Now you know everything that I wish I’d known before running my first marathon. If you follow the principles laid out in this book you’ll have a better chance at avoiding injury and making rookie mistakes.

I’d encourage you to listen to our podcast, look us up on Facebook, and join MTA Member. Surround yourself with things that will help you achieve your goals.

The journey to finishing your first marathon won’t be easy, but it will be a life-changing experience. You’ll discover inner and outer strength that you never knew you had.

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**Be sure to email me with your marathon success story!**

angie@marathontrainingacademy.com

Include a picture of you with your marathon medal. Remember, you do have what it takes to run a marathon and change your life.
As distance runners, we tend to think we can eat anything, and be bulletproof to the results as long as we continue our daily exercise routine. But then we experience performance, training, racing and weight loss plateaus.

One definition of insanity is “doing the same thing over and over again and expecting different results”. Congratulations. You’re in that tiny 1% of the running population who understands how this statement applies to nutrition and has committed to making a change from dietary insanity.

Consider the following eighteen questions to be your runner’s roadmap to positive change in your day-to-day diet. While “race day nutrition” is an important topic, sometimes a runner’s daily lifestyle diet is neglected, so these questions will help you address that issue.
Be warned: alterations in your diet can often cause symptoms such as dizziness, confusion, headaches, fatigue, and grumpiness. This is especially true if you consume a traditional runner’s diet high in starchy carbohydrates. But as you make changes, your taste-buds, digestive system, and cells will adapt to your new dietary habits and re-learn how to utilize fat (versus sugar) as a primary fuel source within 1-2 weeks. Once that happens, you’ll be running like a champion!

Question Number One: How Frequent Are My Meals?
You should eat every 1.5-3 hours, 6-10 meals per day. Package, plan, prepare. You will need to get some Ziplock bags, Tupperware, mini-coolers, and paper bags so you can take your snacks with you.

Sample Snacks

- Almonds and dried cranberries
- Walnuts and raisins
- Fat-free plain yogurt w/ berries or nuts
- Smoked salmon slices
- Mini-carrots and broccoli
- Sugar snap peas
- Pre-cooked brown or wild rice with low fat chicken breast and beans
- Frozen or regular red grapes
- Cucumber or zucchini slices
- Green, red or yellow pepper, slices or whole
- Cherry tomatoes or tomato slices with olive oil or sea salt/pepper
- Hummus w/ whole wheat pita
- Celery w/ natural peanut butter/raisins
- 1 piece raw fruit, like apple or pear
- Boiled egg
- Slice of whole grain bread or whole grain cracker
- Can of tuna with diced celery or carrots
- Sliced low-fat turkey breast wrapped in romaine lettuce
- Handful pumpkin, sunflower, or sesame seeds
- Sliced avocado
- Handful healthy cereal (whole grain, bran, oat, no sugars) with nuts
• Energy or protein bar with natural sugars and high seed/nut content
• Soybeans
• Jikama

**Question Number Two: Are My Blood Sugar Levels Stabilized?**
Consider the glycemic index:

**First Choice Carbohydrates (the best!) SLOW ABSORBING**

• Apples, applesauce
• Cherries, peaches, plums
• Pears, blueberries, nectarines
• Chick peas, lentils
• Milk, yogurt
• Eggplant, mushrooms
• Onions, tomatoes, salad greens
• Broccoli, brussel sprouts
• Cucumbers

**Second Choice Carbohydrates (only 15% of total carbohydrate intake) MODERATE**

• Whole grain breads/rolls
• High fiber cereals (not fruit loops or lucky charms)
• Brown or wild rice
• Pasta, oatmeal, wheat
• Squash, peas
• Sweet potatoes
• Corn
• Beans, legumes
• Banana, grapes, raisins
• Unsweetened fruit juices

**Last Choice Carbohydrates (only during and immediately after exercise) FAST**

• Pancakes, waffles, crepes
• White potatoes
• Most cereals
• Sports drinks
• Maple syrup
• Dates, figs, high fructose corn syrup
• Crackers, pretzels
• Honey, molasses, ketchup
• White bread, bagels, rice cakes
Get a fasting blood glucose test at your doctor’s office. It should be around 87 mg/dL. Anything above 100 indicates insulin insensitivity.

Prioritize low-starch (above ground) vegetables like leafy greens, cucumbers, tomatoes, and peppers over high-starch (below ground) vegetables like carrots, potatoes and beets.

Use the following sweeteners if you must gradually wean yourself from sugar: honey, rice syrup, beet sugar, maple syrup, and molasses. Raw honey and fruit are by far the best sweeteners.

Always accompany a carbohydrate with a protein.

**Question Number Three: What Are My Protein Sources?**

1. Ensure that protein sources are lean.

**The leanest sources include:**

- Skim milk, soy milk
- Plain, fat free yogurt, cottage cheese
- Egg whites
- White meat tuna in water
- White meat skinless poultry
- 95% lean ground beef/turkey
- Non-fried fish/seafood
- Trimmed beef, pork tenderloin
- Beans, peas, lentils

**Second leanest sources include:**

- 2% milk
- Low-fat cheese, yogurt
- Whole eggs
- Dark meat tuna in water
- Dark meat skinless poultry
- 85% lean ground beef/turkey
- Turkey bacon/sausage
- Trimmed pork chops/lamb
- Nuts/seeds/peanut butter
Sources high in fat include:

- Whole milk
- Regular cheese
- Ice cream/frozen custard
- 75% lean ground beef
- Fried chicken, fish, seafood
- Bacon, sausage, bologna
- Hotdogs, pepperoni, salami
- Beef or pork ribs
- Untrimmed steak
- Burgers w/ cheese

2. Ensure adequate protein. Look at grams of protein per serving on all packaged food. Recommendations for regular activity: 0.5-0.7 grams per pound. Recommendations for athletes, weightlifters and very active individuals: 0.7-0.9 grams per pound.

3. Go organic on eggs, and limit consumption to no more than 4 eggs a week (females) or 7 eggs a week (males). Modern western diet tends to load our bodies very high with omega 6 fatty acids from vegetable oils, while providing only very low intakes of omega 3 fatty acids. Organic eggs have a much better ratio of omega 3 fatty acids to omega 6 fatty acids, helping bring you back into equilibrium for proper formation of hormones and cell membranes. Do not overcook eggs, as this can degrade the fragile proteins. What about cholesterol? Consume eggs in moderation, but realize that they contain a high degree of lecithin, a cholesterol degrading enzyme that helps your body naturally digest the cholesterol in eggs.

4. Limit intake of dairy proteins, as allergens, hormones, and antibiotics from the modern dairy industry can interfere with your normal cellular metabolism. Consume non-sweetened dairy only, as opposed to "Key Lime Pie" or "Strawberry-Banana" flavored yogurt. Best source for milk is raw milk (not store bought organic). See www.realmilk.com, Lorien’s, Fresh Abundance, Sunrise Creations, Heaven’s Treasures.

5. Limit shellfish and peanut consumption. They tend to have high levels of metabolism-decreasing toxins.
6. Eat preservative-free and low-sodium deli meat, and prioritize grass-fed organic beef or buffalo.

7. Avoid high intake of soy, as most individuals are allergic, even if they don't know it. Soy has several health risks, and can cause weight gain, especially in females. The best soy products to consume are tempeh, miso, and patto.

8. Fish and seafood are allowed, but only in moderation due to mercury and other toxins. Eat twice per week for maximum consumption. Since you're limiting fish, attain your omega-3 fatty acids from capsules or supplements.

9. Nut consumption is allowed for your protein sources, but the majority of nut intake should be from flaxseeds and walnuts, which have more favorable omega-3 to omega-6 ratios for weight loss. Be cautious, because nuts are very calorically dense. A serving is a very small handful.

10. Limit bean and legume intake, since they can have a significant effect on your insulin levels. They must be combined with other protein sources, like nuts, if they are to be the main protein part of your meal.

11. Limit consumption of protein from powders, drink supplements, bars and packaged products to 1 (maximum) per day. Natural protein sources are better absorbed, and better for you!

**Question Number Four: What Are My Fat Sources?**

Eat the right types of fats:

**Fat Intake from Good Monounsaturated Fat Sources**

- Wheat Germ
- Sunflower Seeds
• Italian Salad Dressing (Olive Oil + Balsamic)
• Oils: Poppyseed, Safflower, Grapeseed
• Sesame Seeds
• Almonds
• Walnut
• Filberts/Hazelnuts
• Salmon Sardine & Herring Oil
• Fortified Cereals
• Rice & Wheat Bran
• Macadamia Nuts
• Olives
• Cashews
• Natural Peanut Butter
• Poppyseeds
• Pumpkin Seeds
• Buckwheat Flour
• Lima Beans

• Brazil Nuts
• Wild Rice
• Pine Nuts
• Banana Chips
• Pecans
• Anchovies
• Flax Seed Oil
• Spirulina
• Seaweed
• Soybeans
• Prunes
• Pea Pods
• Leeks
• Shellfish
• Garbanzo Beans
• Chickpeas
• Avocado
• Guacamole

Fat Intake from Good Saturated Fat Sources:

• Coconut Oil
• Eggs
• Butter
• Organic Beef, Bison, or Buffalo

Avoid the wrong types of fats:

• Trans Fats
• Shortening
• French fries

• Cookies
• Pastries, muffins, scones, biscotti
• Soup mixes
• Potato chips
• Doughnuts
• Frozen foods
• Packaged crackers and snacks

Polyunsaturated Fats
• Corn based oils
• Sunflower oil
• Sesame oil
• Soybean oil
• Safflower oil
• Canola oil

Question Number Five: How Are My Hydration Habits?
• Divide body weight in half for ounces of water you should drink per day, at a minimum. Sip water throughout the day, rather than consuming in large portions. Install a water filter in your home (i.e. carbon or reverse osmosis), and use bottled spring water. Drink soda water or add fresh lemon/lime to water if you are addicted to soft drink or flavored beverages.

• Always drink water during exercise. Approximately 1 water bottle per hour.

• Limit black coffee to no more than 16 ounces per day. At coffee shops, choose black coffee (with small amount soy or skim milk if necessary), brewed tea or americanos.

• Delta-E is good energy alternative (megadose Vitamin B) with very little caffeine.
• Limit alcohol consumption to no more than 1 drink per day.

• Avoid all fruit juice and sport drink consumption, unless during exercise.

**Question Number Six: Are My Dietary Fuels Properly Balanced?**

• Protein, fat and carbohydrate needs vary with level of activity and unique metabolic needs.

• Carb Type – typically not very hungry throughout the day and rarely feel a need to “snack”. Satisfied by higher carbohydrate intake and not sensitive to weight gain through carb/alcohol consumption: 55-70% carb, 15-25% protein, 15-25% fat

• Protein Type – typically constantly hungry, grumpy when not eating every few hours, only satisfied when proteins/fats included with a meal, and sensitive to weight gain through carb/alcohol consumption: 40% carb, 30% protein, 30% fat

• Athletes: Mix Carb on active days with Protein on inactive days

**Question Number Seven: How Is Pre/Post Workout Nutrition?**

• Never exercise starved. Fuel with 300-400 calories 2-3 hours prior (unless early morning exercise), then 50-100 calories immediately before.

• Fuel with carbohydrate for exercise sessions lasting longer than 60 minutes, and up to 2 hours.
- Fuel with carbohydrate, fat, and protein for exercise sessions lasting longer than 2 hours.

- Never avoid eating after a workout.

- Post-workout consumption with carbohydrate and protein mix after exercise. Protein must be complete (egg, whey, soy, dairy or animal), and fueling must be within 20 minutes of exercise completion (the sooner the better).
  
  - Turkey or chicken in whole grain tortilla
  - Tuna wrapped in single slice whole grain bread
  - 2 eggs scrambled and wrapped into whole grain tortilla
  - Whey protein smoothie with banana
  - 1 container fat-free, plain yogurt with a small handful of walnuts, and berries or sliced fruit
  - 1 serving cottage cheese with small handful of flaxseed, berries or sliced fruit
  - 1 apple dipped in ½-1 container yogurt, with 12-20 almonds
  - 1 cup of Kashi or other whole grain cereal with 1 cup of soy or skim milk.
  - 1 cup oatmeal with 1 egg and raw honey
  - Bumblebar, Biobar, other organic seed or nut based bar

**Question Number Eight: Is There A Complex Breakfast?**

Breakfast must include low or moderate carbohydrate

- Oatmeal
- Whole grain cereal
- Whole grain bread
- Yogurt
- Skim or soy milk
- Fruit
• Tomato
• Potato

• Spinach
• Onion

Complete protein

• Lean turkey breast
• Salmon
• Egg
• Whey protein

Monounsaturated fat

• Almonds
• Walnuts
• Flaxseed
• Natural peanut butter
• Avocados

Fiber - Typically fulfilled by carbohydrate sources mentioned above

**Question Number Nine: Do I Taper My Carbohydrates?**
Prioritize primary carbohydrate consumption in A.M., especially from moderate sources. Prioritize low-starch carbohydrates, proteins, and fats in P.M.

**Morning**

• Whole grains
• Fruits
• Yogurt
• Health Bars

**Afternoon/evening**
• Vegetables
• Nuts/seeds
• Meats
• Protein supplements

**Question Number Ten: Do I Have Adequate Fiber Intake?**
• Frequently, throughout the day, just like water
• Must have at least 1 large salad per day, preferably 2
• Primary fiber intake must be from vegetables. Secondary from fruit, grains, seeds, nuts.

**Question Number Eleven: How Is My Evening Meal Structured?**
• Finish 2 hours before bedtime
• Prioritize proteins and vegetables
• Limit grains, breads, rice, potatoes, etc.
• Allow for light activity afterwards

**Question Number Twelve: What Are My Alcohol Consumption Habits?**
• Avoid or adjust caloric intake from other food sources.
• Drink at least 1 glass water with each drink
• Best choices: soda water + hard alcohol, red wine (pref. organic), high-quality beer
• Worst choices: mixed drinks, liquors, low-quality beer
Question Number Thirteen: Am I Addicted to Artificial Sweeteners?
Aspartame, sucralose, acesulfame potassium, saccharin all cause appetite cravings and weight gain.

Question Number Fourteen: How Many of My Staple Foods Include Small Mistakes That Add Up?
- Creamer in coffee
- Natural vs. regular peanut butter
- Diet soda, gum
- M&M’s in trail mix
- Salt

Question Number Fifteen: Do I Think “Outside the Box” When Eating Out?
- Roasted vegetables for mashed potatoes
- Grilled chicken for fried
- Wrap instead of bread
- Regular rice for fried
- Hold the rich sauce
- Hold the bread
- Hold the chips/salsa
- Hold or half the cheese
- Dressing on the side
- Bring to-go box or box half in kitchen
- Cork with the wine
- Control appetite with 50-100 calorie appetizers 10-20 minutes before meal. Appetizers should be based on protein/fat (olive oil, macadamia nut, flaxseed, almond, soy proteins, dairy proteins). Soups also work very well.
Question Number Sixteen: How Is My Supplement Intake?

- Probiotic or active live culture supplementation with probiotics, organic, natural yogurt or kefir can assist with digestive absorption.

- Vitamin E supplementation can help with omega-3 absorption and is crucial as an antioxidant for very active individuals. Lipoic acid is also a good natural antioxidant if you exercise frequently.

- Cod liver oil and omega-3 fat capsules can assist with proper hormonal production and cellular health. (i.e. EnerEFA or Bioletics Pharmax oil)

- Chromium supplementation can help with sugar cravings. Vanadium, biotin, and magnesium are also helpful for glucose control and insulin sensitivity. Recommend Thermo Factor/Lean Factor combo by Impax.

- If you are completely avoiding dairy, consider a calcium supplement. Chelated calcium is the most bioavailable source. Recommend Nutricology Calcium Citrate or Solaray Calcium Aspartate. Vitamin D, Boron, and Magnesium also important for bone density, calcium sparing effect.

- Athletes, growing children usually benefit from multivitamin or greens supplement. Recommend EnerPrime by Impax or Premium Insurance by Hammer.

- Smell your vitamins! Don’t take them if they smell bad.

- Limit use of “sport” supplements, like protein powders, meal replacement powders, and any other processed, packaged, or canned health food. When choosing energy bars, look for:
Primary carb source (at least 3g of fiber or more) from whole grains like brown rice, oats, bran, barley, rye, buckwheat or whole wheat flour.

- Natural sugars (preferably 15g or less): dried or fresh fruit, fruit juice, purees (fructose), milk (lactose) and honey
- Lean protein sources such as whey, soy, casein or eggs
- Monounsaturated fat supplied by nuts and seeds, nut butters, flaxseed
- Limit ingredients like wheat flakes, rice, white flour, high fructose corn syrup, sugar, dextrose, malitol, malt syrup, artificial sweeteners, preservatives and colors, saturated/trans fats, palm kernel oil, hydrogenated vegetable oil or extra calories from chocolate, caramel, frosting, or icing.
- Recommend Bumblebar, HammerBar, Biobar, Larabar.

- Limit pharmaceutical drug intake, in particular antibiotics, anti-ulcers, birth control pills, and estrogen.

- Season your foods with herbs such as rosemary, ginger, and turmeric, which are powerful antioxidants, anti-inflammatories, and detoxifiers. Seasoning with cinnamon will help with blood sugar levels.

**Question Number Seventeen: How Do I Care For Vegetables?**

- Eat mostly uncooked or just lightly steamed. Preferably organic.
- Soak non-organic vegetables for 10-20 minutes in large sink with 4-8 ounces of vinegar, then rinse well.
- Pack vegetables in airtight ziplocks or containers
Question Number Eighteen: How Is My Sleep & Stress?
Inadequate sleep affects insulin sensitivity, appetite control hormones (increased leptin, decreased ghrelin), weight loss hormones (decreased testosterone, increased cortisol) and appetite neurotransmitters (decreased GABA, serotonin, dopamine).

Increase you sleep

- Goal is 6-8 hours
- Stop eating 2 hours prior to bedtime, especially from carbohydrates
- Keep room dark as possible
- No TV before bed
- No computer use in bed
- Keep pen and pad next to bed
- Avoid afternoon caffeine
- Keep temp close to 70 degrees or less
- Take hot bath or shower
- Keep alarm quiet or use natural light source to awake
- Try to go to sleep before 11pm
- Melatonin or Somnidren GH (millenniumsports.net)

Decrease stress

- 4, 7, 8 breathing
- Progressive Muscular Relaxation
- Exercise
- Word association/imagery
- Yoga/stretching
- Music
- Control
GOING TO BE TOUGH TO CONTROL THAT APPETITE?

**Bonus**: highly effective appetite control/satiety strategy

- *Drink 10oz of water half hour before meal*
- *Chew each bite 10 times*
- *Eat protein portion of your meal first*
- *Swallow one mouthful water between bites*
- *Take as long as possible to consume meal*
- *After finishing, pour a large glass of water and take 1-2 pieces of mint gum.*

Have you read any of Ben Greenfield’s books? If you’re an endurance athlete, you won’t want to miss his endurance training and nutrition titles, which are all available at [http://www.pacificfit.net/books-dvds.php](http://www.pacificfit.net/books-dvds.php)
Appendix A

Training Plans

Explanation of Terms:
Rest = take a break today, rest your body and mind.

Easy = run at a steady comfortable pace, 60-75% maximum heart rate, you should be able to talk in short sentences.

XT = cross-train, this should be a low-impact activity like swimming, cycling, yoga, elliptical, rowing, or weight training.

Tempo = run 1 mile at an easy pace then ¼ mile at a comfortably hard pace (heart rate 75-85% max), then easy ¼ mile, repeat until you have ½ mile left and cool down with an easy pace.

Hills = warm up for 1 mile at easy pace, find the best hills along your route and run up hill at a steady pace, then run down and repeat or run to next set of hills. Finish workout with 1 mile easy running. On the treadmill warm up for 1 mile then increase incline to 2.5-3.5 for ¼ mile, then set the incline on 1.0 for ¼ mile, repeat until you have 1 mile left and cool down with easy pace.

LR = Long Run. These can be changed to fit your schedule (for example, you may choose to do your long run on Sunday instead of Saturday). Make the day before your long run a light cross-training or rest day. You should also make the day after a long run a rest day. The long run should be done approximately 1 minute/mile slower than your normal pace.

MP = Marathon Pace. Do these workouts at the pace you want to sustain during your marathon.
Beginner Half Marathon Training Plan

Congratulations, you made it this far! Getting to the first week of marathon training has taken incredible discipline and self confidence. Now you are going to take on a challenge that is truly life changing. This training schedule is based on a 3 day a week running plan with focused cross training between runs. Many running experts recommend this formula to reduce stress to joints and muscles.

**Important Reminders**: Before you start this schedule you should have built a solid running base of running 3-5 miles at a time at least 3x a week for 6-12 months. It is beneficial to have a run a half marathon previously but not necessary. *Check with your doctor before beginning your half marathon training.

- Be sure to **warm up** by walking briskly for 5 minutes before each run.
- After completing workout, **cool down** by walking for 5 minutes.
- **Stretch** after every run when muscles are warm to increase flexibility and decrease injuries. Focus on hips, quadriceps, hamstrings, and calves.

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*For helpful tips and motivation, check out the Marathon Training Academy podcast found in the iTunes store. We wish you ultimate success in reaching your running goals!*
Beginner Marathon Training Plan

Congratulations, you made it this far! Getting to the first week of marathon training has taken incredible discipline and self confidence. Now you are going to take on a challenge that is truly life changing. This training schedule is based on a 3 day a week running plan with focused cross training between runs. Many running experts recommend this formula to reduce stress to joints and muscles.

**Important Reminders:** Before you start this schedule you should have built a solid running base of running 3-5 miles at a time at least 3x a week for 6-12 months. It is beneficial to have a run a half marathon previously but not necessary. *Check with your doctor before beginning your marathon training.

- Be sure to **warm up** by walking briskly for 5 minutes before beginning each run.
- After completing workout, **cool down** by walking for 5 minutes.
- **Stretch** after every run when muscles are warm to increase flexibility and decrease injuries. Focus on hips, quadriceps, hamstrings, and calves.

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Intermediate Half Marathon Training Plan

Congratulations, you made it this far! Getting to the first week of marathon training has taken incredible discipline and self confidence. Now you are going to take on a challenge that is truly life changing. This training schedule is based on a 3 day a week running plan with focused cross training between runs. Many running experts recommend this formula to reduce stress to joints and muscles.

**Important Reminders:** Before you start this schedule you should have built a solid running base of running 3-5 miles at a time at least 3x a week for 6-12 months. It is beneficial to have a run a half marathon previously but not necessary. *Check with your doctor before beginning your half marathon training.

- Be sure to **warm up** by walking briskly for 5 minutes before each run.
- After completing workout, **cool down** by walking for 5 minutes.
- **Stretch** after every run when muscles are warm to increase flexibility and decrease injuries. Focus on hips, quadriceps, hamstrings, and calves.

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Intermediate Marathon Training Plan

Congratulations, you made it this far! Getting to the first week of marathon training has taken incredible discipline and self confidence. Now you are going to take on a challenge that is truly life changing. This training schedule is based on a 3 day a week running plan with focused cross training between runs. Many running experts recommend this formula to reduce stress to joints and muscles.

**Important Reminders:** Before you start this schedule you should have completed at least 1 previous marathon and be comfortably running 20 miles a week. *Always check with your doctor before beginning your marathon training.

- Be sure to **warm up** by walking briskly for 5 minutes before beginning each run.
- After completing workout, **cool down** by walking for 5 minutes.
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Does Long Distance Running Damage Your Joints?

I had to answer this question because it is one of my major pet peeves. Well meaning people (maybe feeling convicted about their lack of exercise) seem to think that running is somehow hard on one’s health. They cite future arthritis and people who had a heart attack while running a marathon as evidence that we are crazy to be doing this. So, what does the evidence say?

A 2006 study in the Journal of the American Osteopathic Association found that "long distance running does not increase the risk of osteoarthritis of the knees and hips for healthy people... long distance running might even have a protective effect against joint degeneration." The article went on to say that running also decreases the risk of cardiovascular disease, diabetes mellitus, and depression, helps with weight control, improves bone density, and decreases mortality.

One of the best studies that proves this point is the 50 Plus Runners Association study that was started in 1984. When it was launched a control group of subjects 50 + were chosen and studied at 5 year intervals. It compared runners who averaged 26 miles/week with a non-running group. The most recent report published in 2009 Arthritis Research & Therapy found that the runners experienced about 25% less muscoskeletal pain and women benefited the most. Some possible reasons for these results include: endorphins, fewer muscular injuries, and a higher pain threshold. "The stronger the muscles and tissues around your joints, the better they will be able to support and protect those joints." Without use the joints get stiff and the cartilage is weakened. Obesity is thought to be the major contributor to arthritis and runners are better able to keep the pounds off.
There have been cases of runners dying suddenly during marathons. In the case of those under 35 like US Olympic hopeful Ryan Shay, most had an undiagnosed congenital (they were born with it) heart defect (electrical problem) or hypertrophic cardiomyopathy (heart muscle enlarges and the blood supply can't meet the demand). For runners 40 and older (like Alberto Salazar, winner of 82 Boston Marathon and 94 Comrades Marathon) it was usually the result of coronary artery disease (CAD) cholesterol plaque buildup in the arteries supplying the heart.

Running is only one piece of the overall health picture. Even if you run regularly it is still important to eat a healthy diet and know your blood pressure and cholesterol numbers. Never ignore the warning signs of a heart attack: chest or shoulder/arm pain, excessive shortness of breath, or abdominal pain (nausea), dizziness. However, risk of a runner dying of heart problems is 1/100th that of the normal population. I think I'll take those odds.

Is It Safe To Run In Hot Weather?

Heat and humidity can increase the risk of dehydration, heat cramps, and heat stroke. For those of us who experience hot and humid running conditions during the summer, here are a few hot weather safety tips.

- Be sure to check the heat index which takes into account the temperature and humidity level.
- Consider running early in the morning (which is best) or in the evening to avoid the hottest time of the day (10am-4pm). Try to run in a shaded area.
- Stay hydrated. Avoid caffeine and alcohol which have a diuretic effect. Consume 16 oz. water an hour before your run. Drink water or a sports drink during a run over 30 minutes, and drink 16 oz + after your run. Obey your thirst and be sure to drink when your mouth feels dry. Consider a
sports drink to replace salt and other minerals (electrolytes) during a long run.

- Wear light-colored clothing which will reflect the sun (dark colors absorb light). Make sure you wear loose fitting, breathable, synthetic fabrics, and avoid cotton. Wear a broad brimmed hat and sunglasses.

- Apply sunscreen with SPF 30+ with UVA and UVB protection that is waterproof to any exposed skin. Use SPF lip balm.

- Don’t push the intensity of your workout which could lead to exhaustion and dehydration. Don’t run long distances alone.

- Know the signs of heat related problems:

  **Mild Dehydration:** signs include increased thirst, nausea, dry mouth, decreased or dark yellow urine; treat by increasing fluids and getting to cool place.

  **Moderate dehydration:** extreme thirst, dry mucous membranes (mouth, eyes, nose), decreased or dark urine, light-headedness; treat w/ fluids and cool location.

  **Severe dehydration:** symptoms include all of the above along with chills, cramps, disorientation; seek medical attention to replace fluids.

  **Heat cramps:** symptoms include painful, involuntary muscle spasms, increased sweating, normal body temperature; cramps usually occur in calves, arms, abs, or back; treatment includes stop running, get to cool place, apply cool wet towels, gently massage area; if cramp lasts longer than 1 hour seek medical attention.

  **Heat exhaustion:** signs include fatigue, goose bumps, weakness, headache, dizziness, nausea, vomiting, decreased coordination, possible fainting, moist, cool, pale skin; treatment includes stopping exercise, get to cool place, replace fluids, loosen clothing, cool towels to skin.
Can I Do My Training Runs on the Treadmill?

Many people wonder about the effectiveness of running on a treadmill versus out on the road. There are both advantages and disadvantages to treadmill running, and the "mill" is better than doing nothing. If you are training for a marathon, maintenance runs can easily be done on the treadmill.

Treadmills can be a good place to do hill workouts (especially if you live in a flat area). Running on the treadmill makes the hip flexors work harder to increase stability. Hamstrings don't work as hard to propel the body forward. But your body needs to adjust to running on the road and your long runs should be done outside.

Advantages:
- convenient (kids, weather, safety, night)
- privacy
- hill workouts
- can set at race pace and run at high speeds
- can watch TV
- less impact on joints: may decrease stress related injuries

Disadvantages:
- expense
- space it takes up
- takes less effort (10%)
- stride changes (may over stride)
- easier to slack off and cut workout short
- boredom
- no scenery, fresh air

Guidelines:
- set incline at 1%+ to mimic road conditions and wind resistance
- do long runs outdoors (50% miles)
- take time to get used to the different form
- transition slowly from treadmill to road
- play w/ speed and incline to decrease boredom

Do You Have Any Advice for Heavier Runners?

In general, you are considered a heavier runner if you are a man and weigh more than 185 pounds and over 150 pounds for a woman. It is important to know your Body Mass Index (BMI). However, that doesn't show the whole picture for those with larger frames or those who have large muscle mass. Don't worry if you don't look like a "runner." Not everyone looks like a Kenyan and has long, Gazelle-like legs.

I read an article in Newsweek by Jennifer Graham called, "Confessions of a Fat Runner." She talked about people looking surprised when she tells them that she runs marathons and has logged well over 10,000 miles in her life. She said that her spirit cries gazelle while her shadow yells walrus. Don't be afraid to call yourself a runner or marathoner of you are heavier than average. When you line up for a race look around and see all the different body types.

Here are some guidelines for the "Clydesdales" out there:

- Go to a specialty running store to have your foot and gait evaluated: larger runners often have flat feet and a tendency to overpronate, look for a durable, motion control shoe that has plenty of support and cushioning, in general, don't buy the lightest shoe out there.
- You may have to replace your shoes more often (every 300-400 miles as opposed to 500 for lighter runners)
• Realize that you may be more prone to injury due to the increased force created with your foot strike
• Alternate running days with lower impact cross training
• If you are new to running, start slow and consider a run/walk program, slow and steady will lead to success
• Learn and practice good running form, you want to be propelling forward, not bouncing up and down
• Listen to your body, slow down if you experience injury or constant pain
• Don't be discouraged if you don't lose weight right away, building muscle will cause the numbers on the scale not to go down right away, but remember that muscle burns more calories than fat
• Make sure to hydrate before, during, and after a run
• Practice good nutrition: you may be hungrier after starting to run, but you don't necessarily need to eat more, quality over quantity
• Purchase some running clothes that you look good in: it will motivate you to get out more often, if you're embarrassed by how you look you might not do as much as you could.

What Should I Eat Before Running

A good guideline is not to be stuffed or starved before going out for your run. I never eat anything at least 1 hour before my run and I advise you to do the same, unless you have an iron stomach. Dean Karnazes can eat a whole pizza while running. Figure out what your system can handle and then do it. If you have a touching system then you should let things digest before your run.

Pre-run foods should be high in carbs and low in fat, fiber, and protein (easily digestible). Here are some of my favorite pre-run foods.

• Bagel with peanut butter
• Banana with peanut butter
• Energy bar
• Cereal with milk
• Oatmeal
• Yogurt

If you struggle with gastrointestinal issues here are some foods to avoid:
• Caffeine and carbonated beverages
• High fat foods like meat, dairy, high fiber, whole grains, vegetables, beans, and some fruits.

Because everyone’s system is different you need to practice, practice, practice to find what works for you. Nail down what foods you perform well on and then stick to them. Do nothing new on race day.

How do I Choose the Training Plan that is Right for Me?

There are lots of marathon training programs out there! But choosing the best one for you can be really difficult, especially for beginners or people who have only completed a few marathons. Following the right marathon training program however is a key factor in determining how well you will finish the 26.2 mile race.

If you try to follow a marathon program that is too ambitious you will be sure to suffer from over-training. This results in fatigue and you feel constantly tired. You will not peak properly for race day. On the other hand, if you under train and do not build up a sufficient base of training miles you will very likely run out of stamina well before the end of the race.

1. Training Levels
When it comes to marathon programs a single training schedule will definitely not suit everyone. Make sure the program you follow has at least three levels such as beginner, intermediate and experienced.

2. Training Program Length
The training schedule should not be too long, or too short for that matter. A program lasting between 14 and 18 weeks will suit most people. First time
marathoners may need more. You also need a good base of running regularly - I recommend at least a year before tackling the marathon distance.

3. The Hard Day - Easy Day Method
Look at the daily runs, and weekly mileage increases in the training program. A good training schedule will follow the hard day - easy day approach. The weekly mileage should not increase too rapidly from one week to the next. A 10 - 15% change from the previous week is a good rule to follow.

4. Mileage Goals
Good schedules will have a recommended daily and weekly running goal. They will also indicate the type of run you should be doing. For example easy, hill, and tempo runs usually form part of the weekly training. The schedule itself should be well laid out, and easy to track in your running log.

5. Long Runs
The training program should have a gradual increase in your weekly long run distance. This long run is the key to your marathon training, as you develop the ability to complete these runs without over-stressing your body. Avoid training runs over 20 miles - you don't need to run as far as the marathon distance during training. It takes too long to recover from 24, or 25 mile training runs.

6. High Mileage Programs
For most people the training program you select should not take you to too high a weekly mileage. A gradual build up to around 45 to 65 miles is as high a weekly mileage as you will need to reach. The programs for beginners will be at the lower end of this scale

7. Twenty Mile Training Runs
Two long runs of 20 miles should be sufficient for the beginner and intermediate levels. Three 20-mile runs are usually enough for the experienced marathoner.

How Do I Use Yoga to Reinforce My Running?
While training for my first marathon I didn't have a focused stretching
regimen and was plagued by various injuries. Later I took up yoga and noticed the benefits while training for my next marathon. Regular yoga, focused stretching, and cross training made me a stronger, more balanced, and healthier runner.

**Sports injuries are often caused by imbalances.** The pain most runners feel is not from the running in and of itself, but from imbalances that running can cause or exacerbate. **Yoga can help you increase range of motion, agility, flexibility, lung capacity, endurance, and strength.**

Runners are well-equipped for Yoga practice. Texas ultra-runner Rick Lewis, who has been practicing yoga for several years now, says, "Distance running requires a mental stillness that is often compromised by the inner chatterbox. Yoga provides a fertile ground for learning these mental skills".

When successful runners are presented with a hardship during a run, perhaps a cramp or fatigue, they calmly deal with it, altering their breath, gait, or pace. The mental approach is similar in distance running and yoga as you become aware of what your body is saying. Yoga’s mind-body practice will strongly appeal to the mind of a runner, who thrives on the meditative and solitary aspect of their running routine. Some runners have developed subtle, but potentially harmful, imbalances in the way their feet hit the ground and the way they maintain their alignment throughout their stride. Yoga can restore these instabilities allowing the runner to experience a more agile and much safer workout.

People commonly confuse meditation with physical yoga. They can be mutually beneficial, but are also independent and individual. It makes no difference if you are naturally flexible or not, because yoga simply asks you to find the movement through the breath at your furthest point.

Yoga is extremely beneficial and the perfect balance to running. While runners may have incredible endurance and powerful legs, they often have terribly tight leg, hip, and upper back muscles. Yoga can increase flexibility, decrease soreness, speed recovery, increase range of motion, build strength, increase agility, decrease injury, increase flexibility, build lung capacity, endurance, balance, and bring more oxygen and blood to your muscles, ligaments, and tendons.
Types of Yoga

- **Astanga Vinyasa Yoga**: incorporates a posture sequence (six total) with specific breath-flow. It places emphasis on strength, flexibility, and stamina.

- **Iyengar Yoga**: integrates physical poise with mental and emotional equilibrium. Precision and alignment are emphasized and poses are held for a longer duration.

- **Kundalini Yoga**: the yoga of “awareness” incorporates meditation with the physical postures. Aimed at the body, mind, and spirit.

- **Bikram Yoga**: “hot yoga,” studio is heated to over 100 degrees F with 70% humidity. It is designed to enhance the mind and body by warming and stretching muscles, ligaments, and tendons. Uses 26 poses and is often performed in front of mirrors to focus on the correct physical pose.

- **Kripalu Yoga**: the yoga of consciousness which emphasizes listening to your body for feedback while doing postures.

- **Hatha Yoga**: “forceful” yoga to combine physical postures and breathing to unite the opposing energies of the body.

- **Integral Yoga**: a system that combines many of the meditative aspects of yoga.

Sample yoga stretching routine:
The following stretches should be performed after you run when your muscles are warm. Hold each stretch for 30 seconds. See demonstrational video for example routine.

1. **Downward facing dog**: from hands and knees straiten legs and lift bottom toward ceiling, elongate spine, gently push heels to floor, hold abs in, drop
head to floor. Stretches shoulders, chest, back of legs (hamstrings, calves), strengthens upper body, thighs, and core, elongates spine.

2. **Upward facing dog**: lay face down on mat with legs stretched behind, push up and straighten arms, lift torso and thighs off floor, rest on hands and tops of feet. Builds back and arm muscles, stretches chest, shoulders, and tops of feet.

3. **Triangle**: stand with feet 3-3.5 feet apart with right foot pointing forward and left foot pointed out toward side, the right heel should be in line with the arch of the left foot, bend torso toward front leg while extending right hand toward floor and place beside right foot, straighten and extend left arm up in the air, gaze at left hand.

4. **Lunge**: place right foot three feet forward and bend knee, keep knee lined up with toe, keep left leg straight behind while balanced on left ball of foot, shift weight forward and reach both hands toward ground on each side of right foot. This pose stretches groin, hamstrings, hips, calves, and Achilles tendon.

5. **Pigeon w/ forward fold and quad stretch**: from lunge position take right leg and fold it under you with foot toward groin, fold forward as far as is comfortable, hold for 30 seconds; next take left leg and pull foot toward butt with left hand, hold 30 seconds. Targets hips, quadriceps, hamstrings, and IT band.

6. **Bound ankle pose** (butterfly): sit up straight and tall, bend knees out to side with soles of feet together in center of groin, lift spine, exhale and lean forward gently. Stretches inner thighs, pelvis, hips, and shins.

7. **Glute stretch** (reclining pigeon): lay on back with right leg bent and foot resting over left knee, reach hands around left thigh and gently pull toward body. Opens hips and stretches glutes and hamstrings.
8. **Head to knee**: sit with legs extended straight in front of you with back straight, hinge forward with torso and reach toward toes, with each breath exhale and lower torso closer to thighs. This pose stretches calves, hamstrings, hips, and back.

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**Appendix C**

**How to Deal with the Six Most Common Running Injuries**

There are dozens of potential running injuries. This is certainly not a comprehensive list but covers the six most common running injuries. Remember, running injuries are common, but they don't have to be debilitating. Putting a proven injury prevention strategy in place will help keep you running strong for many years.

This content is not intended to be a substitute for individual professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. Never disregard professional medical advice or delay in seeking it because of information you accessed on or through any portion of this ebook.

**Runner’s Knee**

Patellofemoral Pain Syndrome, also known as runners knee, is pain and stiffness localized around the kneecap. Ideally the kneecap glides smoothly in the groove at the end of your femur (thighbone). The kneecap can fall out of alignment and
cause increased pain at slower speeds because the knee has less range of motion and is putting increased demand on small areas of the joint.

The pain typically comes on after a predictable distance and is made worse by running long distance, walking up or down stairs, squatting, and bending the knee for a long time. Those at higher risk include: women, those with flat feet or high arches, overtraining, running on hard, cambered surfaces, decreased ankle flexibility, and those who run a 10 minute mile or slower. Women are at risk because they have a more extreme hip to knee angle which can push the kneecaps out of alignment.

Do the following to test whether this issue is causing your knee pain. First, relax your quadricep muscle. Then with your left hand, push the top end of your kneecap so that the bottom tip comes away from the knee joint. While pushing, press along the lower border of the kneecap. If you feel pain while doing this, chances are you have runner’s knee.

**To prevent Runner’s Knee:**

- Stretch hamstrings and quadriceps
- Strengthen quadriceps, glutes, and calf muscles using squats and lunges to stabilize the kneecaps
- Keep pelvis level while running- use good running form

**Treatment strategies include:**

- The previous prevention strategies
- Ice for 20 min twice/day
- Non-steroidal anti-inflammatory medications (NSAIDS) like Tylenol or Aleve taken 30 minutes before exercise
- Anti-pronation shoes
- Specially made corrective orthotics (made by a podiatrist)
Iliotibial (IT) Band Friction Syndrome
The classic feature of this injury is severe pain localized over the outside of the knee. Pain is absent in rest and present during exercise and it can be painful to walk down stairs. Running distance is often limited as the pain comes on rapidly. The knee can also be painful without running and the outer knee is usually tender to pressure.

This pain is caused when the band of fibers that runs along the outside of the knee to the top of the shin become inflamed. This fascia (tendon) extending from the hip across the outside of the knee inserts into the large shin bone (tibia) immediately below the line of the knee joint. When the knee bends 30 degrees, the fascia contacts the femoral epicondyle and causes pain.

Those at higher risk for this injury include:

- Women with BMI greater than 21 (135 pounds @ 5'7’’): extra weight puts a heavier load on the hips and the increased pressure makes the hips sag more than normal with each step;
- Long runs of greater duration than 2 hours
- Running hills frequently (increased 30 degree knee flexion)
- Running on slanted surfaces
- Leg length discrepancies
- Hard running shoes w/ poor shock absorbing properties
- Novice marathoners while increasing mileage

Prevention of (IT) Band Friction Syndrome

- Strengthen muscles around the IT band w/ leg walking (put a resistance band around both ankles and walk sideways), side lying leg lifts: 3 sets 20
- Use foam roller to loosen IT band
- Stretch: seated leg twist
• Run on soft, flat surfaces

**Treatment of (IT) Band Friction Syndrome**

• Reduce mileage
• Immobilization
• NSAIDS
• Ice, three times/day
• Stretch six times/day

**Patellar Tendinitis**

The patellar tendon connects the kneecap (patella) to the shinbone and repeated motion can create small tears in the tendon. The body may struggle to repair these tears causing pain.

Risk factors include:

• Men with a BMI greater than 25
• History of basketball or other sports that require jumping
• Increasing weekly running mileage
• Overpronators
• History of tendon injuries

**Prevention of Patellar Tendinitis**

• Keep weight in check
• Strengthen patellar tendon by doing squats to build quadriceps muscle
• Stretch quads and hamstrings
• Don't increase weekly mileage more than 10%
• Use good body mechanics and proper running form
Treatment of Patellar Tendinitis

- Rest (no running or jumping), low impact activity okay
- Massage
- NSAIDS
- Patellar tendon strap to distribute force away from tendon
- Corticosteroid injections to decrease pain and inflammation

Medial Tibial Stress Syndrome (aka Shin Splints)
This pain and soreness will be felt along the inside front of the lower leg. The posterior tibial tendon runs into the arch of the foot. If the feet roll inward excessively the tendon has to work hard to counteract this motion resulting in connective tissue soreness. To feel where maximal tenderness is, apply pressure to sore area and it will cause well localized tenderness. The injury can develop through four stages:

Stage 1: vague discomfort, pain poorly localized in calf after exercise
Stage 2: pain comes during exercise but can still "run through" the discomfort
Stage 3: pain becomes so severe that you can't run
Stage 4: stress fracture

Risk factors include:

- Beginning runners who increase mileage too fast
- Training on slanted surfaces or downhill running
- Wearing high heels
- Overpronaters (feet that roll inward too much)
- Tight calf muscles
- Overstriding
- Female
- Heavier body weight
- Flat or high arched foot

Treatment of Shin Splints

- Motion control shoes
- Stretching and strengthening
- Slowly building mileage
- Running on flat, soft surface
- Strengthen calf muscles: do toe raises with dumbbells
- Orthotics for shoes
- Compression sleeves for shins
- Increased dietary calcium
- Ice massage to area for 20 minutes, 2-3 times/day
- With treatment it should disappear in 4-10 weeks

Achilles Tendinosis (tendonitis)
This is a non-inflammatory degenerative condition that results in poor blood supply to area. The Achilles tendon absorbs several times your body weight with each step. In a grade 1 injury pain may be noticed first thing in the morning and will be felt as a stiffness and discomfort behind the ankle causing limping. Pain will strike when you push off your toes in the running motion. In a Grade 2 injury there will be a continued discomfort after running, with the pain well localized to the tendon and tender to touch. A sudden onset or pain and weakness in which you can't walk normally is probably a complete tendon rupture which will require surgical repair.
Risk factors:

- Men w/ BMI greater than 25 (5'10" and 175 pounds)
- Running a 9 minute mile or faster: increased weight and increased pace = increased stress
- Worn out shoes
- Increasing training distance too suddenly
- Inflexible calf muscles
- Age 30-50
- Hypermobile, flat feet or high arches

Treatment of Achilles Tendinosis

- Anti-pronation shoes with rigid heel counters and firm midsoles
- Orthotics for shoes
- Stretching calf muscle 10-20 min/day
- Strengthening calf muscles with calf raises, 3 sets of 10
- Rest for 7-21 days
- Physical therapy
- Ice
- Non-impact cross training

Plantar Fasciitis

The plantar (bottom of foot) fascia (tough fibrous connective tissue) connects the heel bone (calcaneus) to the base of the toes. Inflammation, irritation, and swelling of the tissue along the bottom of the foot is usually the most painful in the morning. The pain is usually located directly in front of the heel and often results in a hobbling motion when weight is placed on the heel. Extreme point tenderness at the origin of the plantar fascia from the calcaneus (heel) is noticed when palpated (pressing on that area).

Risk factors:
• Men over 40
• History of injury
• Wearing shoes w/o good arch support (flip flops) frequently
• Pregnant women
• High arched, rigid fee
• Leg length inequality

Treatment of Plantar Fasciitis

• Stretch calves before getting out of bed in the am (flex toes toward knees)
• Strengthen calves with toe raises
• No uphill running or speed work
• Orthotics for shoes
• Ice and massage- roll golf or tennis ball under foot
• Foot splint at night for 14 weeks

Muscle Tears
Acute muscle tears- classic injury of explosive sports. There is a sudden, severe pain and loss of function. Muscle spasms, tenderness, swelling, and bruising may also result. This can be caused by muscle imbalances, inflexibility, inadequate warm up, and muscle fatigue.

Treatment of Muscle Tears

• MRI for diagnosis
• RICE: rest, ice, compression, elevation
• Rehab
• Stretching and strengthening
• Hyperbaric O2 therapy
Chronic muscle tears are common in elite distance runners. Pain comes on gradually after exercise and grows progressively worse and is usually localized in a large muscle group (glutes, groin, hamstring, and calves). The injury won't improve without correct treatment. These tears can be diagnosed by pressing two fingers firmly into the muscle and finding a tender, hard knot. They can also be diagnosed by MRI.

The best way to prevent chronic muscle tears is stretching and strengthening of the muscle group. If a chronic tear develops, rest will make the acute pain subside, but will not heal the injury. The best treatment option is a focused massage called cross frictions. Cross frictions is very painful, but can be effective after 5-10 sessions of treatment.

This advice is not meant to replace the instruction of your doctor or health care provider. Always consult with a professional medical expert when injuries occur.
Disclaimer

This Ebook Does Not Provide Medical Advice. The Content is not intended to be a substitute for individual professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. Never disregard professional medical advice or delay in seeking it because of information you accessed on or through any portion of the Marathon Training Academy Official Guide to Running Your First Marathon. Medical information may change rapidly and Marathon Training Academy cannot verify the accuracy or timeliness of any of this information. Diet and exercise programs should not be followed without first consulting a health care professional. If you have any special health conditions requiring attention, you should consult with your health care professional regularly regarding possible modification of programs found in this ebook. Reliance on any information provided by Marathon Training Academy, or others appearing on in this ebook at the invitation of Marathon Training Academy, is solely at your own risk.

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