Runners’ Shin Splints: An Integrative Approach

A Balanced Footprint for Prevention and Treatment

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"The will to win means nothing without the will to prepare."

~ Juma Ikangaa, 1989 NYC Marathon winner
“Knowledge not shared is knowledge wasted and the web universe is big enough for all of us.”

~ Anonymous

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About Runner Click

At RunnerClick we stand for the individuals behind the shoes, behind the brands, behind the gear, and behind the events. We stand for the individuals that make these things what they are, and that hold them up on their feet, our feet, as we run these many roads and trails together.

It is in the spirit of community, that we put together our team of writers, our team of researchers, and our team of passionate, enthusiastic individuals. We always look for opportunities to create better-written words both in length and quality of thought and writing.

We have come together to dig in and do the research necessary to bring the information needed, and sought after by so many, to the forefront. Consumers and enthusiasts alike will benefit from the many topics and categories that running encompasses.

We thank you for being a part of our community.
About the Author

Diana Rangaves is a full-time writer, editor, award-winning teacher, and pharmacist.

She has work appearing in numerous venues, including children’s picture books, medical pharmaceutical books, scholastic books, and academic articles. Diana is the author of *The Adventures of Rosy Posy Papillion* children’s series. One-hundred percent of the author’s royalties benefit PapHavenRescue.org. She is also the author of the growth educational books, Medicine Child’s Play, Escape into Excellence, and Embrace Your Excellence.

She is actively working on the Ethical Hacker ~ Acidemia a political suspense thriller novel, we wish we could say more.

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Chapter 1 ~ Stand Up for Health

Our bodies tell us when they need attention. All of us are prone to injury, inflammation, and pain. The breadth and depth to which we experience these are dependent upon our insights and behaviors. **Insight** is our seeking information and knowledge. **Behaviors** are making the necessary adjustments, changes, and modifications sooner rather than later.

The healthcare paradigm sequence of getting hurt or injured first followed by treatment can be flipped 180 degrees and read upside down. In the field of health, **pre-habilitation** is a common sense approach to preventing illness, injury, and long-term complications and consequences. We can proactively use deterrent plans and approaches to prevent or diminish the likelihood of injury. We will also have the added benefit of lessening the intensity and severity if hurt.

**Pre-hab** is not just for extreme athletes or professional sports competitors. As avid runners, weekend walkers, and sedentary sitters, we can all use prevention strategies, techniques, and habits proactively to manage injury and disease pre-emptively. It is an integrative balance of scientific theory, stretching, strengthening movements for improved gait, muscle exertion, and ultimately safer running practices.

There is a spark within us that nudges us toward persistence. Recall the story of **John Stephen Akhwari** from Tanzania, who ran an Olympic marathon event in 1968 and was injured.
Refusing medical attention, hours later John completed the marathon race, last. When asked why he continued he said, “My country didn't send me to start the race. They sent me to finish the race.”

You have taken the first step by reading this information provided by RunnerClick. This eBook will cover shin splint injury, with in-depth methods in prevention and treatment.

It does not matter if it is the 400 meter, a 10 K, or a walk in the park; our goals on the health and fitness trail begin with that first step.

*We are here to get it done and finish the race!*
Chapter 2 ~ Understanding Shin Splints

What are Shin Splints?

From the knees to the ankles, is the area of our body known as the shin. Our lower legs are subject to impact forces from all activities involving walking, running, cycling, and sports. The term shin splints refer to a cluster of any type of aches and pain throughout the lower leg. In particular, the discomfort is located in the anterior or frontal and lateral or side part of the tibia bone. Shin splints are defined as ‘pain along the inner edge of the shinbone’ by the American Academy of Orthopedic Surgeons. The medical term is medial tibial stress syndrome (MTSS) or traction periostitis named for the inflammation of the tibia bone in that region.

Shin splints are a shared condition in active people. Generally, a self-inflicted injury due to overdoing it! Repetitive, impact trauma damages the network of connective muscle and nearby tissues that cover the bone. As a result, the body mounts an inflammatory response. In sending these chemical messengers, the body is attempting to heal itself given the opportunity.
Once compromised, these tissues and muscle fibers are no longer capable of absorbing the impact forces and workload. They fail to act as the necessary shock absorbers. Consequently, if the person continues to push through the warning pain, the workload force is now shifted to the actual tibia bone. With extreme pressure and overuse, microscopic bone fractures can occur weakening the supportive skeletal structure.

**Causative Stress Fractures**

These stress fractures can affect any bone; however, the most common are the tibia, metatarsals, and pelvis. The fissures and weak spots can be seen on an MRI or bone scan.
While load-bearing exercise enhances bone density and is being used as a means to delay osteoporosis, this must be utilized sensibly. Pain levels increase radically and medical attention must be sought out quickly.

Athletic, sporting or mechanical use of the body that is daily, intense, substantial, and continuous will counteract any health benefits. Bone will gradually weaken as new bone cannot be laid down rapidly enough. Our bodies bone manufacturing plant produces osteoclasts and osteoblasts.

**Osteoclasts** are the bone scavengers and recyclers. They come in and reduce bone to it molecular parts for repurposing.

**Osteoblasts** are the builders of new bone. Aggressive physical activity will increase the bone scavengers, breaking down more bone than the osteoblasts can replace daily. This contributes to harm and the severity of an injury. There is a 1 ½ to 3 ½ times greater risk of progression from shin splints to stress fractures in women.
While full causality has not been established the possibility of lower bone density and osteoporosis in women may play a role.

Practical and reasonable athletic activity accompanied by phases of rest and recovery are just as important to bone health as exercise.

**Self-Assessment of Signs and Symptoms**

Shin splints are uncomfortable and in some individual very painful. While not serious, they will lead to extended downtime if ignored. Prompt treatment in necessary to avoid weeks or months of recuperation and to mitigate the development of chronic injuries. Seek medical advice if you are unsure of the nature of any pain.

Runner’s and sports athletes will most commonly notice pain at the beginning or after a workout episode. If you experience any
of these signs and symptoms reach out to your healthcare provider:

- Tenderness along the tibia and inside the lower leg
- Inflammation, red or areas that are hot to the touch in the lower leg region
- Pain, discomfort, soreness potentially from all sides
- Muscle tightness and pain, pain levels increasing upon moving or activity
- Achiness between the knee and ankles
- Enlargement, distention, swelling of the lower leg or swelling that progresses
- Numbing or weakness along the tibia tract leading to the feet
- Dull or sharp pain on the front of the tibia with more pain when pressure is applied
- Pain improves with rest and recovery strategies!
Chapter 3 ~ Down the Trail

Epidemiology, Incidence, and Risk Factors

“Why not adjust causes instead of treating effects?”

~ Anonymous

All types of physical activity can result in shin splints. These include running, jumping, dancing, basketball, tennis, gymnastics, and some forms of training. The highest incidence is among aerobic dancers who account for almost 22% of shin splint injuries, running is linked to 13% to 17% and 4% to 8% of cases are a result of military basic training.

The common thread is overuse due to multiple influences. The primary one is choosing to ignore the body’s warning signs. Pushing, driving, and moving forward without regards to balance.

According to research conducted by The American Journal of Sports Medicine, shin splints injury (MTSS) occurs at a rate of about 25% in sports and recreational runner’s total.

Additionally, a pooled population of 3500 runner’s results indicated a prevalence rate of shin splints to be 13.6 to 20%.

A review of published studies has shown that total shin splint injuries can be as high as 58% in some populations; with stress fractures responsible for up to 75% of all shin pain.

With this high rate of return on the sport, a basis for understanding the condition, causes, and proactive pre-
habilitations strategies are logical. In doing so, you can begin to flip the paradigm and adjust the cause rather than treat the effect.

Risk Factors

- **Poor prior body conditioning**, physically ill-equipped, or untrained to handle activity plan marks the beginning of muscle imbalances and exercise stress. Avoid single, determined workouts or sports activity by slowly measuring progress with reasonable goals.
- **Intensification of training and overtraining syndrome** is the front runner for body abuse and injury. Devote time to researching a well-designed workout or training plan that is an individual as you are. Select what fits for you and stick to it until it becomes a habit and your best practices.
- **Upsurge and increase in distances covered** without a gradual upward taper leading to injury.
- **Numerous, consecutive, days** of strong physical activity or training episodes results in cumulative impact forces that resonate within the body causing cell damage.
- **Impact** on hard surfaces, asphalt or concrete alongside additional stressors involved in running downhill, uphill, on rough ground
• **Imbalance** of running biomechanics which is exacerbated with many stops, starts, and abrupt turns. This also occurs when one set of muscles is favored over another during the workout, causing tightening and swelling.

• **Inappropriate equipment**, poor footwear that is worn out or without shock absorption, all leads to insurmountable physical forces stresses on the bone, muscles, and tissues. Invest in quality shoes every 350 to 500 miles.

- **The absence** of proactive stretching, engaging all the muscles of the legs, particularly the Achilles tendon and calf muscles.

- **Inattention to the body and failure to monitor** its reaction to any changes in your routine. The body’s’ language of fatigue, aches, and pains, and low energy are just a few of the signs to allow for more rest and recovery periods. Rework, pivot, and adjust the exercise plan.

- **Skeletal bone health** plays an integral role. Mineral composition and bone density will either contribute to bone
strength or weaken it. Individuals with low bone density have a higher risk.

- **Gender** plays a role in the development of this condition. Due to hip rotation of the pelvic area, women are more likely to develop shin splints.
- **Anatomical** reasons include gait, flat feet, rigid foot arches, musculature imbalance which includes weak, flimsy core muscles, tight lower leg calf muscles, and inflexibility.
- **Lifestyle choices:** smoking, poor cardio performance, low energy
- **Idiopathic** meaning no one knows why!

**Diagnosis**

There are several conditions that can mimic the presentation of shin splits. Therefore, your doctor will look for key factors toward a differential diagnosis. Compartment syndrome, periostitis, and tendonitis can imitate shin splints.

**Compartment syndrome** results from extreme tension load on the muscles that can restrict blood flow or cause blood loss. The
lack of oxygen to the tissues can cause a permanent, incapacitating condition that will affect your quality of life.

**Periostitis** arises from the inflammation of the periosteum sheath. This is tissue that covers both the tibia and fibula bones. A proper diagnosis will facilitate recovery.

**Tendonitis** is the inflammation of tissue instead of bone, also known as acute tibial tendinitis. This occurs when the muscles absorb the impact force rather than the bone and are damaged. Tendon pain results from an abnormal distention, stretching, and pulling.

Additional conditions include:

- **Muscle hernia** is a result of physical exertion to the point of muscle fatigue. The muscle bulges through and over the deep tissue.
- **Radiculopathy** is a pinched, compressed nerve or tumor in the spine that refers pain to other body regions.
- **Deep Vein Thrombosis (DVT)** is a blood clot in the deep vein of the legs and may be triggered by exertion.
- **Popliteal artery entrapment syndrome**, a very fancy way of referring to a rare condition that blocks blood supply to the leg causing ischemia.

What to expect from your doctor? There are several diagnostic tests that can be used as a tool to discern the correct disorder.

- Medical, physical exam, activity history
- X-ray to see bone structure health, bone scan or MRI
- Vascular and neurologic examinations are normal for shin splints
A healthy body starts with making healthful choices. In making these choices, ask yourself do they take you to your goal?

We can change lifestyle, diet, smoking, exercise patterns, and thoughts just as easily as changing our running shoes.

By consuming nourishing, wholesome foods we provide our body with the molecular building blocks to maintain bone, tissues, muscles, and our brain!
‘Food, food, glorious food’ as the lyrics from the 1968 musical Oliver, affirms, ‘is worth waiting for’. The best place to receive our nutrition is from food. It is important for overall health to have enough caloric intakes balanced with proteins, amino acids, and vitamins. For consideration high concentrations of nutrients can be found in:

- Egg Yolks
- Fresh fruits and citrus
- Green leafy vegetables
- Mackerel
- Milk
- Orange juice
- Tuna
- Whole grains and fiber

**Vitamin and mineral supplements** are an easy proactive method to get the basics if you are unable to get it from food.

**Calcium** is a mineral necessary for bone health. If we fail to maintain the appropriate blood level calcium from foods or supplements, the body will pull calcium from the bone. As we age this increases the risk of osteoporosis for both men and women. Osteoporosis is a reduction in bone mass that causes the bones to become weak and brittle. As such, they break easily.
The recommended calcium supplementation is 1000 to 1200 mg/day. There are multiple forms of calcium products available. Consult your pharmacist or healthcare provider to help determine which one is the best for you.

**Vitamin D** or the ‘sunshine vitamin’ promotes calcium absorption from the gastrointestinal tract. It works in tandem with calcium to stimulate bone density and strength. Nutritional sources of vitamin D include:

- Beef liver
- Broccoli
- Cheese
- Egg yolks
- Milk
- Mackerel
- Salmon
- Tuna
Chapter 5 ~ Runner’s High: Pre-habilitation Training

Proactive prevention steps are a decision that we make. It is a way for us to reach our goals. By focusing on the bigger picture we can choose approaches that fit our individual requirements best and create a plan. A plan that we enjoy and integrate into our daily lives will soon become a habit, a practice, and then a lifestyle.

The art of prevention is about the future. It is taking a positive, hands-on approach that is upbeat. In taking the initiative, we define our potential. Using a planning model of stretches, exercise, massage, rest and recovery as tools, you can select what you like and discard the rest. Ultimately, you create a training regimen that you find safe and tolerable. One that you will find fun and be enthusiastic to complete!
To meet your goals, consider the following:

**Begin slowly and monitor your results** this is called incremental training. Ease into the routine, stretch, or exercise. The rule of thumb is to ‘start low and go slow’. This will help in keeping you and your body safe while you work your way up in amount, intensity, duration, and performance.

**Train at a rate that is comfortable for you.** Loss of progress and pain will deflate anyone’s good intentions. Spare yourself this experience. If you do not feel like running one day, cross-train and swim as this will shake it up a bit while still progressing on your plan.

The pre-habilitation proactive approaches that follow are:

- Shin Muscle Stretches
- Shin Muscle Exercise
- Self-massage
- Yoga Poses
- Post-workout ice therapy

**Remain faithful,** it may take some time.
Shin Muscle Stretches

Stretch of the Achilles

1. Locate a small platform, step stool, or sidewalk curb.
2. Place one foot on the top of the platform.
3. Place the other foot behind you on the edge, with the lip of the platform under the arch of the foot.
4. Keep the toes hugging the edge of the platform and slowly lower the heel downward.
5. You will feel the stretch radiate along the calf muscle to the foot.
6. Hold for 15 seconds then reverse to the other leg and repeat.

Knee to chest stretch

1. Place a padded mat on the floor and lie down on your back.
2. Lift your left knee and bring it slowly toward your chest.
3. Take both hands and hug your knee cap.
4. Gently add pressure and pull the knee as close to the chest as possible.
5. Hold for 15 seconds then reverse to the other leg and repeat.
Lunge stretch

1. Stand straight on a padded mat.
2. Lift your left knee and bend it slowly bringing it forward.
3. With the right foot set straight back landing on the ball of your foot.
4. Gently add pressure and feel the stretch.
5. Hold for 15 seconds then reverse to the other leg and repeat.

Anterior tibia stretch

1. Kneel down both knee caps on a padded mat.
2. Gently place your buttocks downward and sit on your heels.
3. Slowly lean back feeling the frontal stretch in the shins.
4. Hold for 15 seconds.
5. For a deeper stretch, place your hands on your feet at the toes.
6. Slowly lift the feet upwards and hold.
7. If you feel pain anywhere relax the stretch right away and stop.
**Calf Muscle Roll**

1. Get a padded mat and place on the floor along with a foam roller.
2. Sit on the mat with one leg extended and the other one bent at the knee.
3. Place the foam roller under the extended legs calf muscle.
4. Take both hands and place behind your with palms on the mat to bear your weight.
5. Lift slightly off the mat and rotate the calf muscle on the foam roller back and forth. Keep the rolling and adjust the pressure of the roll with your body. Only do what is comfortable.
6. You will feel the stretch radiate along the calf muscle to the foot.
7. Rotate the foam roller with your calf for 15 seconds then reverse to the other leg and repeat.

**Hamstring/Quad Muscle**

1. Get a padded mat and place on the floor along with a foam roller.
2. Sit on the mat with one leg extended and the other one bent at the knee.
3. Place the foam roller under the extended legs hamstring or quad muscle at the top region of the leg.
4. Take both hands and place behind your with palms on the mat to bear your weight.
5. Lift slightly off the mat and rotate the calf muscle on the foam roller back and forth. Keep the rolling and adjust the pressure of the roll with your body. Only do what is comfortable.
6. You will feel the stretch radiate along the hamstring/quad muscle to the foot.
7. For additional pressure, you can place the heel of your other foot near the kneecap of the exercising leg. Rotate the foam roller back and forth with your quad muscle for 15 seconds then reverse to the other leg and repeat.

**Glute IT Band Roll**

1. Get a padded mat and place on the floor along with a foam roller. Place your buttocks on the foam roller.
2. Sit on the mat with one leg extended and the other one bent at the knee.
3. Place the heel of your straight leg near the kneecap of the exercising leg.
4. Rotate the foam roller back and forth feeling the stretch in the gluteal buttock muscles.
5. Keep the rolling and adjust the pressure of the roll with your body. Only do what is comfortable.
6. For additional pressure, you can rotate to your side plank position and roll the IT bands.
7. Rotate the foam roller back and forth with your glute muscle for 15 seconds then reverse to the other glute.
**Toe Curls**

1. Get a padded mat, towel, and place on the floor.
2. Place the towel at one edge of the mat.
3. Stand on the mat and put one foot on the towel.
4. Feel the towel under your toes and curl your toes, grabbing as much of the towel underneath them as possible.
5. Slowly keep constricting and relaxing the toes.
6. Only do what is comfortable.
7. Reverse to the toes of the other leg.

**Frankenstein Walk**

1. Get a padded mat and place on the floor.
2. Stand with your feet apart and shoulders square.
3. With the left leg take a step forward out to the left.
4. Then with the right leg take a step forward out to the right.
5. Now do the reverse.
6. With the left leg take a step backward out to the left.
7. Then with the right leg take a step backward out to the right.
8. Only do what is comfortable.
9. Reverse again and repeat.

**One-Legged Bridges**

1. Get a padded mat, place on the floor and lie on your back.
2. Bend both knees with feet flat on the pad.
3. Lift hips upward off the floor.
4. Then with the right leg stretch it out into the air.
5. Hold for a count of 30 seconds then lower and relax.
6. Now do the reverse. With the left leg stretch it out into the air.
7. Hold for a count of 30 seconds then lower and relax.
8. Only do what is comfortable. Reverse again and repeat. Gradually work up to 60 seconds of hold if you wish.
Shin Muscle Exercises

Gluteal Exercise

1. Get a padded mat, place on the floor and lie on your back.
2. Bend both knees with feet flat on the pad.
3. Place the left ankle on top of the right knee.
4. Then take the right leg pull it towards your chest.
5. Hold for a count of 30 seconds then lower and relax.
6. Now do the reverse. With the right leg.
7. Hold for a count of 30 seconds then lower and relax.
8. Only do what is comfortable. Reverse again and repeat. Gradually work up to 60 seconds of hold if you wish.

Clam Exercise

1. Get a padded mat, place on the floor and lie on your side.
2. Bend both hips and knees with feet together on the pad.
3. Elevate the top leg keeping the feet together.
4. Hold for a count of 2 seconds then lower and relax.
5. Now do the reverse side.
6. Hold for a count of 2 seconds then lower and relax.
7. Only do what is comfortable. Reverse again and repeat. Gradually work up to 30 seconds of hold if you wish.

Prone Hip Extensions/Straight Leg Raise

1. Get a padded mat, place on the floor and lie on your stomach.
2. Rest your head on your arms.
3. Contract the stomach and glute muscles.
4. Elevate the left leg keeping the right leg on the floor.
5. Hold for a count of 5 seconds then lower and relax.
6. Now do the other side. Hold for a count of 5 seconds then lower and relax.
7. Only do what is comfortable. Reverse again and repeat. Gradually work up to 30 seconds of hold if you wish.
8. You can repeat this same exercise lying on your back.
Standing Calf

1. Face a wall and place your hands flat out in front of you touching the wall.
2. Place your left leg back and the right leg front toward the wall with knee bent.
3. Gently incline your body and lean into the wall.
4. Hold for a count of 15 seconds then relax.
5. Now do the reverse side.
6. Hold for a count of 15 seconds then relax.
7. Only do what is comfortable. Reverse again and repeat. Gradually work up to 30 seconds of hold if you wish.

Knee Hamstring

1. Get a padded mat, place on the floor close to a doorway.
2. Place your left leg through the doorway.
3. Raise the right leg and place it straight against the wall.
4. Hold for a count of 15 seconds then lower and relax.
5. Now do the reverse side.
6. Hold for a count of 15 seconds then lower and relax.
7. Only do what is comfortable. Reverse again and repeat. Gradually work up to 30 seconds of hold if you wish.
Soleus

1. Face a wall and place your hands flat out in front of you touching the wall.
2. Place your feet toe-to-heel holding the wall for support.
3. Gently incline your body and lean into the wall bending your knees.
4. Hold for a count of 15 seconds then relax.
5. Now do the reverse side.
6. Hold for a count of 15 seconds then relax.
7. Only do what is comfortable. Reverse again and repeat. Gradually work up to 30 seconds of hold if you wish.

Heel and toe walk

1. Place a padded mat along the side of a wall and lean back on your heels.
2. Start walking forward on your heels.
3. Gently walks the distance of the wall and return the other directions.
4. Reverse and walk the same distance on your toes.
5. Repeat as you wish. Only do what is comfortable.
6. You can also repeat this exercise by walking on the inside and outside regions of the foot.

Shin raises

1. Place a padded mat along the side of a wall and stand on your toes.
2. Start in the tip toe up position. Hold for 3 seconds.
3. Gently come down to a non-tip toe position flat on the mat.
4. Repeat as you wish. Only do what is comfortable.
Self-Massage

The benefits of massage are increased blood flow, muscles, and tendon relaxation, and they can be completed without special equipment.

Frontal Tibia Work

1. Place a padded mat on the floor and sit down.
2. Bend one knee and bring closer to your body.
3. With your fingers, knead the front muscle just next to the tibia bone, applying slow, graduated pressure.
4. As you are doing this flex your foot upward.
5. You will feel the muscles move, hold the pressure and massage.
6. Only do what is comfortable.
7. Reverse to the other leg.

Posterior Tibia Work

1. Place a padded mat on the floor and sit down.
2. Bend one knee and bring closer to your body.
3. With your fingers, knead the back muscle just next to the tibia bone, applying slow, graduated pressure.
4. As you are doing this flex your foot upward.
5. You will feel the muscles move, hold the pressure and massage.
6. Only do what is comfortable.
7. Reverse to the other leg.
Shin Calf Work

1. Place a padded mat on the floor and sit down.
2. Bend one knee and bring closer to your body.
3. With your thumbs, knead the lower front muscle just next to the tibia bone, applying slow, graduated pressure.
4. As you are doing this flex your foot upward.
5. You will feel the muscles move, hold the pressure and massage.
6. Only do what is comfortable.
7. Reverse to the other leg.

Foot Plantar Fascia Work

1. Place a padded mat on the floor and sit down.
2. Bend one knee and bring your foot closer to your body.
3. With your fingers of the soles of the foot, locate sore, tight or tender areas.
4. Knead the muscle spot with your thumbs, applying slow, graduated pressure.
5. As you are doing this, wriggle your toes slowly.
6. You will feel the muscles move, hold the pressure and massage.
7. Only do what is comfortable.
8. Reverse to the other leg.
Yoga

Yoga employs a mind-body connection that centers on flexibility and balance. Each pose is designed to revitalize muscles, enhance posture, and release stress and tension.

Butterfly pose

1. Place a padded mat on the floor and sit down.
2. Stretch out both legs in front of you.
3. Gently bend your knees so the soles are touching each other.
4. Bring your arms forward to touching your feet to hold them in position.
5. You will feel the muscles move, hold the pressure for a few seconds then release.
6. Only do what is comfortable.
**Tortoise Pose**

1. Place a padded mat on the floor and sit down.
2. Stretch out both legs in front of you.
3. Stretch out both arms in front of you.
4. Gently bend your knees and lean frontwards with arms extending to the sides.
5. Bend the torso toward the floor crossing over your legs.
6. As you are doing this, lean your face chin as close to the floor as possible.
7. You will feel the muscles move, hold the pressure for a few seconds then release.
8. Only do what is comfortable.

![Tortoise Pose Image]

**Rabbit pose**

1. Place a padded mat on the floor and sit down.
2. Gently bend your torso forward.
3. As you are doing this, lean your head as close to the knees or floor as possible. Bring your arms forward to touch your heels.
4. You will feel the muscles move, hold the pressure for a few seconds then release. Only do what is comfortable.

![Rabbit Pose Image]
Locust Pose

1. Place a padded mat on the floor and lie on your stomach.
2. Stretch out both arms to the sides.
3. Position your head frontwards, chin patting the floor.
4. Gently raise your legs and pelvis as much as possible.
5. As you are doing this, keep your torso on the floor.
6. You will feel the muscles move, hold the pressure for a few seconds then release. Only do what is comfortable.

Forward bend

1. Place a padded mat on the floor and stand upright.
2. Stretch out both arms forward at 90 degrees from the floor.
3. Position your torso and bend as much as possible to form a 90-degree angle.
4. As you are doing this, keep your back straight.
5. You will feel the muscles move, hold the pressure for a few seconds then release. Only do what is comfortable.
Post-Workout Ice Therapy

**Ice therapy** can be used pre-emptively, meaning before you get hurt. After exercising your muscles may need to cool down, ice or cold packs help reduce swelling, ease pain, and minimize the body’s inflammatory substances to the area. This speeds the recovery period of the tissues. Cooling and deflation therapy is an easy and effective protective mechanism.

Select an ice pack, bag of frozen peas, or a paper cup of frozen water! Place a towel around the pack and apply to the affected region for 15 to 20 minutes post-activity while enjoying rest and recovery.
Rest and Recovery

The delights and pains of running and sports are eternally bound hand in hand. One never goes without the other. Developments in sports medicine, physical therapy, and kinesiology continue to bring forth vital information.

Practice inserting preventative rest and recovery periods after each and every workout. This allows the body tissue and cells time to recuperate before you move on to the next big activity.

As the saying goes, “An ounce of prevention is worth a pound of cure”. Application of this simple tool is the mainstay of a post-injury treatment plan. Applied prior, you can have longer periods that are pain and injury free.
Chapter 6 ~ 10-K Pace Treatment

Fartlek

Think 10-K PACE!! Each runner or athlete has a different pace. Now, reframe this analogy and apply it to healing and recovery. Always, always, always, recovery mandates rest. Throughout running, sports, and activities the motivation and concentration are on performance. The Swedish term, ‘fartlek’, describes a mixture of slow, moderate running and short, rapid surges. This creative way to train increases speed and endurance.

The same thing applies to healing from anything. It is a ‘speed play’ with numerous variable processes overlaying each other layer by layer. The focus and importance are shifted to recuperation. Using your transferable athletic skill set, create a fartlek personal targeted recuperation and revitalization plan. Consider this as an extended, required, time for ‘junk miles’, a runner expression for recovery after tough workouts.

So to that end, there is a cafeteria-style menu of options to select from. We make choices every moment. We choose our running gear, warm-ups, training style, races and marathons to the pre-habilitation stretches, exercises, yoga, and self-massage tools that we enjoy.

The treatment addresses supportive care that provide symptom relief and minimizes discomfort while the body is allowed the time to heal. Consult a healthcare professional before implementing
any injury treatment strategies. You can choose what works for you the individual and appreciate the progression of healing.

The ever present, compelling temptation to resume sports activity will be present during your recuperation. To prevent further injury and delay recovery, consider the 10% Principle. You may increase the duration and amount of workouts weekly by no more than 10%. Never exceed what is comfortable.

**Therapy Options**

**Protect**- Guard your health and surround your injury with a mental and physical shield. Recuperation can take anywhere from two to four weeks up to six months depending on the seriousness. During this time your body is looking for protection from you to do what it needs to do. It needs time and your cooperation.

**Rest**- Seize the time and take some days off! Discontinue the activity and find an alternative, such as sleeping, reading, walking, swimming, or discover something new. Try a seven to ten-day minimum time-out or inactivity, until the pain subsides.
Ice- Just as ice therapy can be utilized as a pre-habilitation, pre-injury tool; it is a post-injury treatment means. Softly give the hurt area a ten-minute ice massage, ice bath, ice pack or ice cubes up to four to eight times a day for the first two weeks. Some runners use the ‘popsicle’ method. By freezing water in a small paper cup and stroking it up and down the injury.

Compression- Wrapping the injury affords protection, support, and improves nutrient rich blood circulation and oxygen delivery needed for tissue cell regeneration. There are numerous neoprene products, such as wraps, elastic bandage, socks, shoes, and sleeves, with ample well-researched informational
reviews and buying guides. Whatever you select, keep it secure, but loose on the injury. The rule of thumb is to literally be able to place your thumb under the wrap comfortably. This assures sufficient blood circulation.

- **Kinesiology Tape** is another tool that can be used prior to walking for the day. Similar to compression, taping provides muscles support, reduces workload stress, and increases blood circulation.
Elevation- Along with rest goes elevation. During your sedentary day and reading time keep the area slightly raised. This aids in reducing the pain and swelling. At night, while sleeping, place injured area on a pillow if possible.

Medication- There are many analgesic pain medications that can be used as an adjuvant to your treatment plan. They are available with or without a physician’s order. Consult your pharmacist or healthcare provider for the appropriate dose and side effect information. Read all labels before taking any medications. Therapeutic classifications include:

- **Non-steroidal anti-inflammatory drugs (NSAIDs):** examples are ibuprofen (Motrin®), naproxen (Aleve®) and aspirin
- **Analgesics:** examples are oral acetaminophen (Tylenol®), topical rubs containing an anesthetic, Lidocaine®, Icy Hot® or Aspercreme®
- **Potent anti-inflammatories and analgesics,** such as cortisone injections and opioids narcotics, respectively, must be used with caution. For these therapeutic classifications, the benefits must outweigh the risks.

**Hot and cold therapy**- Contrast bathing is another recuperation method. It is to be used only if it brings you pain relief. This involves rotating for five minutes in each of a cold and hot water bath or bucket. Alternating between cold and hot water appears to muscles, improve blood flow, and comfort levels.
Orthoses- Invest in quality gear that will assist in recovery. Once healed it can be repurposed and integrated into your running regimen. Orthoses are orthotic devices biomechanically designed to provide support and realignment.

They assist a weak or injured part of the body, minimize further injury, and redistribute weight and pressure forces. Products include footwear refitting, shoes, braces, splints, insoles, shoe inserts, arch supports, and shock absorbing cushions. Some a can be custom made to match your unique anatomical specifications.

Physical therapy options include Extracorporeal Shockwave Therapy (ESWT) Neuromuscular Electrical Stimulation (NMES) also referred to as Electric Stimulation (EMS) or Electromyostimulation, E-stim and Graston technique.
Devices are used that produce ultrasound waves or light pulses delivered through the dermis of the skin to stimulate muscle contraction. They are utilized to treat muscles spasms and pain.

The therapeutic outcomes are a deeper increased blood flow, musculature relaxation with accompanying pain reduction, and the muscle fibers improve their tensile strength.

**Surgery** is the last resort will if all other treatment methods fail. Eighty percent of people experience recuperation with rest, ice, heat therapy, over-the-counter medications, bracing, range of motion stretches, exercises, physical therapy, strengthening, and chiropractic manipulations.
As with any surgical procedure, there is a risk of infection and guarantee of success. The risk versus benefit must be analyzed and weighed in a well thought out plan before implementing. Seek advice from your surgeon and primary care physician.
Life’s setbacks, injuries, and disappointments can engulf us. Just like in ‘hitting the wall’ our perseverance is given the opportunity to shine. Stop your athletic activity to find other ways to be productive while healing. Time does heal. Once the pain is gone, ‘taper’ your usual activities back slowly; do not rush. If pain reoccurs stop again and reset. Remember, shin splints healing can take three to six months.

A gradual ‘warm-up’ increases the heart rate, allowing enhanced blood circulation to feed the muscles and tendons, which loosen and comply. Stretching and walking are an easy and safe beginning. Over training and over doing is not progress. It can lead to a very discouraging setback as repeated injury may result in a permanent, disabling condition.

“Humble yourself and serve your body. Listen to its’ needs, desires, and the language it uses. If you listen carefully it will tell you everything you need to know.”

Keep your eye on the long-term prize. This is about a personal experience in attaining an individual peak performance. Just listen to your body to keep it vital and healthy. This is your respectable ‘world’s best’.
Informational Resources and Organizations

National Institute of Arthritis and Musculoskeletal and Skin Diseases
Information Clearinghouse National Institutes of Health
1 AMS Circle
Bethesda, MD 20892-3675
Phone: 301-495-4484 Toll-Free: 1-877-226-4267
Fax: 301-718-6366 TTY: 301-565-2966
http://www.niams.nih.gov/

National Rehabilitation Information Center (NARIC)
4200 Forbes Blvd. Suite 202
Lanham, MD 20706
Phone: 301-459-5900 Toll-Free: 1-800-346-2742
TTY: 301-459-5984
http://www.naric.com/

American Orthopedic Society for Sports Medicine
6300 North River Road Suite 500
Rosemont, IL 60018
Fax: 847-292-4905
http://www.sportsmed.org/
American Academy of Orthopedic Surgeons (AAOS)
6300 North River Road
Rosemont, IL 60018-4262
Phone: 847-823-7186  Toll-Free: 1-800-346-2267
Fax: 847-823-8125
http://orthoinfo.aaos.org/

National Athletic Trainers’ Association
2952 Stemmons Freeway
Dallas, TX 75247
Phone: 214-637-6282  Fax: 214-637-2206
http://www.nata.org/

American Physical Therapy Association
1111 North Fairfax St.
Alexandria, VA 22314-1488
Phone: 703-684-2782  Toll-Free: 1-800-999-2782
TTY: 703-683-6748  Fax: 703-684-7343
http://www.apta.org/
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