

THE BOOK

"Running Injuries - Treatment and Prevention" offers easy to access tips on treating and avoiding injuries. It is written in a language that is easy to understand. The book will help runners and walkers understand how injuries occur, how to prevent them, how to heal them: knee, foot, calf, iliotibial band, plantar fascia, achilles tendon, neuroma, and much more. There is also a section on coming back from an injury and exercising while injured.

THE AUTHORS

Jeff Galloway was an average teenage runner who kept learning and working harder, until he became an Olympian. He is the author of the best-selling running book in North America ("Galloway's Book on Running") and is a Runner's World columnist, as well as an inspirational speaker for more than 200 running and fitness sessions each year. He has worked with over 150,000 average people in training for specific goals and Galloway's quest for an injury-free marathon training program led him to develop group training programs in 1978. Galloway is the designer of the walk-run, low mileage marathon training program (Galloway RUN-WALK method) with an over 98% success rate.

After completing his undergraduate studies at the University of Oregon, David Hannaford went to the Podiatric Medical School in San Francisco. Returning to Oregon to practice, he treated professional, recreational and U of O athletes where he had a staff appointment. Five years later, leaving Eugene for Seattle, he worked in the Sports Medicine Division of The Virginia Mason Hospital. Since 1991, he runs a private practice in the San Francisco area where he almost exclusively treats runners. Some of the best athletes in the world are among his patients. During his time at the University of Oregon, he himself began his career as an avid runner. After hundreds of races, his running interest has progressed to ultra marathoning. He has currently completed 46 ultra marathons and become the 2nd place man (at 51 years old) in the Badwater 135 mile race in Death Valley, CA (126 °F heat). Furthermore he has been the medical director of the San Francisco marathon, Olympic trials, and staff Podiatrist for Jeff Galloway's Tahoe Running Retreats.

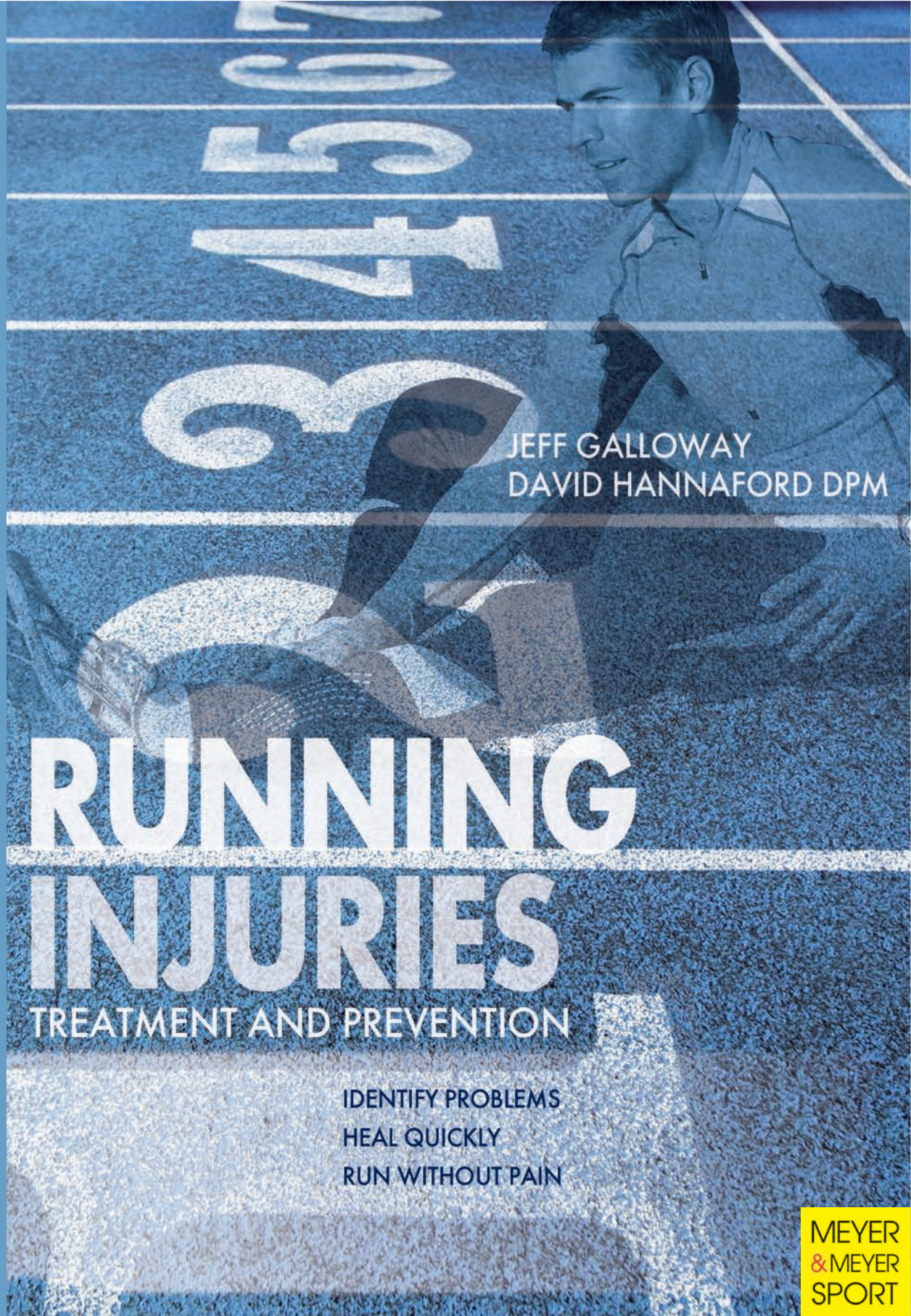
ISBN 978-1-84126-284-0



www.m-m-sports.com

Running Injuries – Treatment & Prevention

Jeff Galloway & David Hannaford



JEFF GALLOWAY
DAVID HANNAFORD DPM

RUNNING INJURIES

TREATMENT AND PREVENTION

IDENTIFY PROBLEMS
HEAL QUICKLY
RUN WITHOUT PAIN

MEYER
& MEYER
SPORT

Running Injuries

Medical Disclaimer: The information in this book is intended as a general guide, and in no way should be seen as a substitute for your doctor's own advice. All care is taken to ensure the information is free from error or omissions. No responsibility, however, can be accepted by the author, editor, publisher, or any other person involved in the preparation of the material for loss occasioned to any person acting or refraining from action as a result of the published information. Before commencing any new health program, diet or exercise, always consult your doctor.

Running Injuries

Treatment and Prevention

Jeff Galloway & David Hannaford DPM

Meyer & Meyer Sport

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Jeff Galloway, David Hannaford
Running Injuries
Maidenhead: Meyer & Meyer Sport (UK) Ltd., 2010
ISBN 978-1-84126-528-5

All rights reserved, especially the right to copy and distribute, including the translation rights.
No part of this work may be reproduced – including by photocopy, microfilm or any other means – processed, stored electronically, copied or distributed in any form whatsoever without the written permission of the publisher.

© 2010 Meyer & Meyer Sport (UK) Ltd.
Aachen, Adelaide, Auckland, Budapest, Cape Town, Graz, Indianapolis,
Maidenhead, Olten (CH), Singapore, Toronto



Member of the World
Sport Publishers' Association (WSPA)

www.w-s-p-a.org
ISBN 978-1-84126-528-5
E-Mail: info@m-m-sports.com
www.m-m-sports.com

Contents

I. Injury-Free for Over 30 Years	9
by Olympian Jeff Galloway	
Why Do We Get Injured...and How to Avoid the Risks	10
by Olympian Jeff Galloway	
• What Causes Injuries?	10
• Be Sensitive to Your “Weak Links”	11
• Common Weak Links	11
• Why Do Micro-tears Accumulate?	11
• Common Causes of Injuries	12
• Aggravating Factors	12
• How Do You Know if You Are Injured?	14
• You Can Take 5 Days Off from Running with no Significant Loss in Conditioning	14
• Quick Action Can Reduce Recovery Time Needed	14
• How to Lower the Chance of Injury	14
• Staying in Shape when Injured	15
• How to Return to Running	15
• Injuries from Running Form Mistakes	16
• Troubleshooting Form-related Injuries	16
• The “Shuffle”	16
• Speedwork Increases Injury Risk	16
• Correct Posture Can Reduce Aches and Pains	17
• Suggestions for Running Smoother, Reducing Irritation to Weak Links	17
• Cramps in the Muscles?	17
• Here Are Several Ways of Dealing with Cramps	18
• Exercises that Can Prevent/Treat Injuries	19
• Preventing Speed Injuries	20
II. Treatment of Injuries	22
by Dr. David Hannaford	
About the list of injuries	22
Area 1 - THE FOOT AND TOES	23
Toe Nails – Discolored Toe Nails	
TOE NAIL TRAUMA	24
Anywhere on Foot	
BLISTERS AND CALLUSES	28

Toe Numbness, Pain and Tissue Damage
 RAYNAUD'S SYNDROME32

Front of Foot – Base of Toes, Occasionally Top of Foot
 NEUROMA35

Front of Foot on Bottom – May Include Toes
 METATARSALGIA39

The Second or Third Toe Joint
 METATARSAL PHALANGEAL SYNOVITIS
 -ALSO KNOWN AS CAPSULITIS, PRE-DISLOCATION SYNDROME, PLANTAR PLATE
 INJURY42

Pain in Outer Top of Foot and Up to Ankle Crease
 EXTENSOR TENDINITIS46

Foot – Front to Middle
 STRESS FRACTURE OF THE FOOT50

Behind Big Toe – Top of the Foot at the Instep
 FIRST METATARSAL-CUNEIFORM AREA54

Pain that Is Deep Inside the Big Toe Joint
 BIG TOE PAIN57

Outside of Foot – Midway on the Prominent Bone
 5TH METATARSAL STYLOID PROCESS INJURIES63

Outer Side of Heel –
Also Below Ankle Bone Moving Toward Mid Foot on Outside
 PERONEAL TENDON INJURY, OUTER HEEL AREA AND CUBOID SYNDROME ..66

Inside of Foot – at Ankle Bone
 TIBIALIS POSTERIOR MEDIAL FOOT/TARSAL TUNNEL69

Bottom of Heel – May Extend Along Bottom of Arch all the Way to Front of Foot
 PLANTAR FASCIITIS73

Back of Heel – Sometimes Underneath
 POSTERIOR HEEL PAIN77

Area 2 - THE ANKLE82

Outside of the Ankle Mostly – But Can Be Inside
 ANKLE SPRAINS83

On or Around the Outer Ankle Bone
 OUTER ANKLE87

Inside of Ankle – Just Above the Ankle Bone
 TIBIALIS POSTERIOR ANKLE91

Throughout the Ankle – No Specific Area
 RECURRENT INVERSION SPRAINS AND ANKLE INSTABILITY94

The Tendon Just Above the Back of the Heel Bone
 ACHILLES TENDON97

Area 3 - LOWER LEG BELOW THE KNEE	101
Front of the Lower Leg – Outside of the Shin Bone	
ANTERIOR SHIN PAIN	102
Front of the Shin – on the Inside Inner Edge	
MEDIAL SHIN PAIN	106
Outside of the Lower Leg, Above the Ankle to Just Below the Knee	
LATERAL LOWER LEG PAIN	111
Various Pains in the Calf Muscle	
CALF PAIN	114
Area 4 - THE KNEE	119
Pain at the Kneecap, or at the Muscle Attachment to the Kneecap	
PATELLO-FEMORAL KNEE PAIN	120
The Area Directly Behind the Knee and Toward the Inside	
POPLITEAL AND PES ANSERINUS PAIN	125
On the Outside of the Knee	
ILIOTIBIAL BAND AND BICEPS FEMORIS INSERTION	128
Area 5 - UPPER LEG & BUTT	132
On the Inside of the Upper Leg – From the Groin or Lower Butt Muscle – In the Direction of the Knee	
MEDIAL THIGH PAIN	133
Outside of the Thigh from the Bony Knob on the Outside of the Hip, Going Down	
LATERAL THIGH PAIN	136
From the Upper Butt Muscle Down the Backside of the Upper Leg to the Knee	
HAMSTRING PAIN	139
Front of the Hip, Where the Leg Attaches – Just Above or Just Below	
HIP FLEXOR INJURY	143
Butt Muscle Pain from the Waist to the Lower Fold in the Butt	
GLUTEAL PAIN AND PIRIFORMIS SYNDROME	147
Area 6 - THE BACK	152
Various Problems in the Lower Back	
LOWER BACK PAIN	153

OTHER ISSUES156
Over-the-counter Drug Issues156
 NON-STEROIDAL ANTI-INFLAMMATORY MEDICATION (NSAID)
 USE IN SPORTS INJURIES156
 PHYSICAL THERAPY157

III. Galloway's Injury Prevention Tools159
The Galloway Run-Walk-Run™ Method159
The Right Pace/Run-Walk-Run Ratio Reduces Injury Risk Dramatically161
The "Magic Mile"162
Prediction Formulas162
Choosing the Best Shoe for You163

Photo & Illustration Credits:

Cover Photos: © fotolia, Mike Graffigna 2008 & imago, Sportfotodienst
Cover Design: Sabine Groten
Photos: Mizuno

Injury-Free for Over 30 Years

by Olympian Jeff Galloway

Over 50 years ago I literally took the first steps in a life-changing experience: I started running. As a fat and lazy 13 year old, I enrolled in a required conditioning program at my school, fully expecting that running was going to hurt, and that I would quit after 10 weeks of punishment. To my surprise, I felt really good during and after most of my runs. My vitality and positive attitude was better than at any other time of the day. My new running friends were energetic, mentally alert and fun. As I pushed back the distance barriers, I discovered positive feelings and resources I had never experienced. When I was running correctly, I experienced a sense of freedom and well-being that was wonderful and unique. Running helped me be happy.

I became hooked on running and competition. But male ego and testosterone led me into a series of aches, pains and significant injuries. Not wanting to give up the wonderful benefits, and lacking perspective, I often went into denial at the onset of an injury and was forced to stop running after a few more runs due to breakdown of muscles, tendons, etc. The worst part was the psychological letdown during every "vacation" from running (about every 3-4 weeks). The withdrawal from endorphins inspired a desire to eliminate injury. This book is my latest step in that direction.

In 1978 I faced the reality that I would probably never run as fast as I had during my first 20 years of running. My new goal was to stay free of overuse injuries. I'm proud to say that for more than 30 years, I've done this. Chances are, you can be mostly injury free, too. In this book I will tell you the principles and steps that have kept me and over 250,000 clients away from the doctor's office for the most part.

Every week most runners have some aches, pains or injury issues, or questions about whether they have an injury. When I give advice it is from one runner to another. Get medical advice from a doctor who has treated a great number of athletes with the same injury, successfully. Dr. David Hannaford is my top choice for almost any ailment associated with running. At my Tahoe running retreat I've seen him diagnose and treat injuries over and over that other specialists missed. He is as addicted to running as I am and wants to get every injured runner back on the road or trail as soon as possible. He has a gift for communicating his knowledge in ways that non-doctors can understand.

Both of us want you to understand why injuries occur, how to avoid them and that there are successful ways to prevent and treat them. We want you to gain control over your ailments.

Jeff Galloway

Why Do We Get Injured... and How to Avoid the Risks

**Plus: How to return to running... staying in shape while injured....
troubleshooting running form... and more.**

by Olympian Jeff Galloway

What Causes Injuries?

Our bodies are programmed to adapt to running and walking, by making constant "upgrades" to withstand stress and perform more efficiently. Regular and small increases in workload, followed by recovery periods, promote rebuilding and improved capacity. The factor that is most commonly neglected is rest, but it is crucial: It is during the recovery period that the rebuilding takes place.

But each of us has a few "weak links" that take on more stress when we work out. These are the areas that ache, hurt or don't work correctly when we start a new activity, increase training, or don't provide sufficient rest after a hard workout. In some cases, pain-killing hormones, such as endorphins, will mask the damage. Most commonly, exercisers go into denial, ignore the first signs of irritation and continue training until the stressed area breaks down.

To sustain progress and avoid injury, we simply need to follow a simple pattern: 1) A slight increase in training produces a minor breakdown of tissue. 2) If the after-workout rest period is sufficient, the muscles, tendons, cardiovascular system rebuild/restructure to handle a higher level of performance. 3) All body parts continue to adapt in structure, efficiency and performance when there is a balance between workout stress and rest.

Running improvement continues if...

- we don't push too far beyond current capabilities.
- we engage in regular workouts.
- we provide enough rest after the stressful sessions.

Be Sensitive to Your “Weak Links”

Most of the aches and pains experienced by my runners and walkers are located in their “weak link” areas—the muscles, joints, tendons, etc. that take more stress due to our individual range of motion. The process starts during a normal workout when micro-tears develop, in muscles and tendons, due to the focused stress of continued movement/irritation of these key parts. The number of these tiny injuries will increase on long or faster workouts, especially during the last third. But in most cases, the rest period after a workout will allow for healing of most or all of this damage.

Common Weak Links

Joints—knee, hip, ankle
 Muscles—calf, hamstring, quadriceps
 Tendons—Achilles, knee, ankle
 Fascia—especially around joints, foot
 Bones—foot and leg
 Nerve tissue—foot and leg
 Feet—just about any area can be overstressed

There is often no sensation of pain during or immediately after the workout because the body has a number of pain-killing mechanisms (including endorphins) which will temporarily mask the symptoms. But when a critical mass of these broken fibers has accumulated in one area, you have produced more damage than the body can repair in 48 hours—you have an injury.

Why Do Micro-tears Accumulate?

- Constant use
- Prior damage
- Speed work
- Too many races
- Doing something different
- Sudden increase of workload
- Inadequate rest between workouts
- Not enough walk breaks during runs
- Stretching (yes, stretching causes a lot of injuries)
- Heavy body weight

Common Causes of Injuries

It's a physiological fact that the constant use of a muscle, tendon, joint, etc., without a break, will result in earlier fatigue and reduced work potential. Continuing to run/walk when the muscle is extremely fatigued increases the quantity of micro-tears dramatically and is a major cause of injury.

By pacing conservatively and by inserting walk breaks early and often, you will gain a great deal of control over the fatigue process. You'll empower the muscles to maintain resiliency and capacity. This lowers the chance of breakdown, by significantly reducing the accumulating damage that leads to injury. Here are some "tools" that can give you control over your aches and pains:

- The pace of the long run is too fast (see pp. 161-162).
- Speedwork segments are too fast for current ability (see pp. 161-162).
- Pace is too fast for the heat (see p. 114).
- Sudden increase in speed/distance (see p. 20).
- Insufficient rest days per week (three days reduce injury rate most).
- Walk breaks are not taken soon/often enough (see pp. 159-161, top reason for injury).
- Stretching causes many injuries and aggravates many more, be careful.
- Changing form or technique (see p. 16).
- Shoes—seldom a cause, but can aggravate a weak link (see pp. 165-167).
- Changing from a worn-out shoe to a new shoe.
- Trauma—running on a slanted or uneven surface, stepping off a curb, in a hole, etc. This happens rarely, but be careful.

Aggravating Factors

- Prior damage—especially due to accident trauma, football, soccer, skiing, etc. It may not be possible for all of the damage to be repaired. In most cases, training adjustments can be made to allow for continued running/walking exercise into the mature years.

Note: Studies show that runners have healthier joints and fewer orthopedic complaints than non-runners after decades of running. See *RUNNING UNTIL YOU'RE 100* for more information.

- Body weight—every 5 pounds of weight gain above average per age puts significantly more stress on the joints, weak links, etc. With much more frequent walk breaks, however, weight stress can be reduced significantly.
- Speed—Speed training and frequent racing increases stress on the weak links significantly. The elimination of speed work can significantly reduce injury risk. When working with e-coach clients, I have found individual adjustments allowing some form of faster training while managing the risk, in most cases.
- Stride length—longer strides increase risk. A shorter stride may not slow you down if you will increase cadence or turnover.
- Bounce off the ground—the higher the bounce, the more stress on the push-off muscles. The higher the bounce, the more shock to be absorbed upon landing. Stay low to the ground, touching lightly.
- Stretching—I have heard from thousands of runners who have been injured or had injuries aggravated by stretching. In general, I do not recommend stretching. There are individuals who benefit from certain stretches, however. Be careful if you choose to stretch. Stretching is not generally recommended as a warm-up or immediately after running. Trying to stretch out fatigue-induced tightness often results in injury or prolonged recovery.

Note: Those who have iliotibial band injury can often get relief from a few specific stretches that act as a “quick fix” to keep you running. Even when doing these, be careful. The foam roller treatment has been the mode that has reduced healing time for this injury. There is a picture on our website (www.jeffgalloway.com) that shows how to use this.

- Continuing to work out when an injury has begun can dramatically increase the damage in a few minutes. It is always better to stop the exercise immediately if there is an indication that you have an injury.
- Avoid certain exercises that aggravate your weak links.
- The “Toe Squincher.” Everyone should do this exercise every day to reduce/eliminate the chance of having a plantar fascia injury—or other foot problems. Point your foot down and contract the muscles in the forefoot/midfoot region. This strengthens the many little muscles in your feet that will provide extra support.

How Do You Know if You Are Injured?

Continuing to exercise when you feel that you might have an injury puts you at great risk of an extended layoff from running. In most cases that I've monitored, when I suspect that there is an injury, it usually is an injury. Be sensitive to your weak links. When you notice any of the symptoms below, take at least a day or two off from running.

- Inflammation—swelling, puffiness or thickening.
- Loss of function—the area doesn't work correctly or move normally.
- Pain—if the pain does not go away as you get warmed up and walk slowly, or the pain increases, STOP!

You Can Take 5 Days Off from Running with no Significant Loss in Conditioning

It is always better to err on the conservative side of injury repair. If you take an extra day off at the beginning of an injury, you won't lose any conditioning. But if you continue training with an injury, you may increase the healing time by a week or a month for each day you try to push through pain.

Quick Action Can Reduce Recovery Time Needed

Some minor irritation may require just one day off from running. As the pain level increases, so does the need for more recovery days, because there is usually more damage.

How to Lower the Chance of Injury

- Insert walk/shuffle breaks from the beginning.
- Work out every other day (lowest rate of injury).
- Avoid faster running or gently ease into faster running.
- Don't stretch (unless you have certain stretches that work for you and don't hurt you).