

CROSS-COUNTRY RUNNING

Third Edition

A photograph of five runners from behind, running on a gravel path through a wooded area with autumn foliage. The runners are wearing various colored athletic gear and bib numbers. From left to right, the bib numbers are 12, 143, 184, 78, and 77. The runner with bib 77 is in the foreground, wearing an orange and black singlet and a grey skirt. The other runners are further ahead on the path.

**THE BEST TRAINING PLANS FOR PEAK PERFORMANCE
IN THE 5K, 1500M, 2000M, AND 10K**

Jeff Galloway

**MEYER
& MEYER
SPORT**

Cross-Country Running

The content of this book was carefully researched. However, readers should always consult a qualified medical specialist for individual advice before adopting any new nutrition or exercise plan. This book should not be used as an alternative to seeking specialist medical advice.

All information is supplied without liability. Neither the author nor the publisher will be liable for possible disadvantages, injuries, or damages.

Jeff Galloway

CROSS-COUNTRY RUNNING

Third Edition

**THE BEST TRAINING PLANS FOR PEAK PERFORMANCE
IN THE 5K, 1500M, 2000M, AND 10K**

Meyer & Meyer Sport

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

Cross-Country Running

Maidenhead: Meyer & Meyer Sport (UK) Ltd., 2023

9781782559023

All rights reserved, especially the right to copy and distribute, including 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.

© 2011, 2012, 2023 by Meyer & Meyer Sport (UK) Ltd.

First edition 2011. Third edition 2023.

Aachen, Auckland, Beirut, Cairo, Cape Town, Dubai, Hægendorf, Hong Kong, Indianapolis, Maidenhead, Manila, New Delhi, Singapore, Sydney, Tehran, Vienna

 Member of the World Sport Publishers' Association (WSPA)

9781782559023

Email: info@m-m-sports.com

www.thesportspublisher.com

Credits

Cover and interior design: Anja Elsen

Layout: Anja Elsen

Cover and interior photos: © AdobeStock

Managing editor: Elizabeth Evans

CONTENTS

DEDICATION	11
INTRODUCTION: CROSS-COUNTRY CHANGED MY LIFE	12
A NOTE TO COACHES.....	14
1 STAYING INJURY-FREE.....	15
How to stay injury-free.....	15
Curb the enthusiasm.....	16
Why do we get injured?.....	16
Be sensitive to your “weak links”	16
Minor breakdown simulates improvement.....	16
Most injuries are not felt during the workout that produces them.....	17
2 THE INSIDE STORY ON GETTING FASTER.....	19
Getting faster requires extra work.....	20
Teamwork.....	20
The long run builds endurance and a better plumbing system	20
Endorphins kill pain and make you feel good.....	20
Gradually pushing up the workload.....	21
Stress + Rest = Improvement	21
Introducing the body to speed through two weeks of “drills”	21
A gentle increase in your weekly workouts causes a slight breakdown	21
The damage	22
The muscles rebound, stronger and better than before	22
Quality rest is crucial: 48 hours between workouts.....	23
Beware of junk miles.....	23
Regularity.....	23
“Muscle memory”	23

CROSS-COUNTRY RUNNING

- Aerobic running is done during long runs..... 24
- Speed training gets you into the anaerobic zone..... 24
- The anaerobic threshold..... 24
- Fast twitch vs. slow twitch muscle fibers..... 25
- Mental changes—both positive and negative..... 25
- The personal growth of speed training..... 26

- 3 SMART SPEEDWORK = FASTER RACES 27**
 - Training at a pace that is faster than race pace challenges
the system to improve..... 27
 - The faster speedwork produces systems that perform at a higher capacity..... 28
 - Sustained speed—through an increase in the number of repetitions..... 28
 - Longer runs maintain endurance and improve your time..... 28
 - Running form improves..... 28
 - Watch out! Speedwork increases aches, pains and injuries 29

- 4 PREDICTING PERFORMANCE AND MEASURING PROGRESS..... 29**
 - Your goal race: The final exam 30
 - Choose the distance of your Prediction Time Trial..... 30
 - Predicting race performance 30
 - Guidelines for using the formulas..... 31
 - The time trial result predicts the ideal under perfect conditions..... 32
 - Workout grouping 32
 - The first Prediction Time Trial (PTT)..... 33
 - To predict your time in a 1 mile 33
 - To predict your 2 mile or 5K performance..... 33
 - The “leap of faith” goal prediction 34
 - A series of PTTs 35
 - Final reality check 35
 - Use a journal! 36

- 5 PRESEASON CONDITIONING 37**
 - Shoes 37
 - Cross-training..... 37
 - No huffing and puffing on preseason runs..... 38
 - Acceleration-gliders (on Wednesday) 38
 - Terrain training 39

NEW OR "COMEBACK" RUNNERS: Preseason conditioning program 39
 Walk breaks for new runners 40
 VETERAN RUNNERS: Preseason conditioning program 41

6 TRAINING ELEMENTS..... 43

 Every other day? 43
 Changing the specific workout days 44
 How slow for the long runs 44
 Walk breaks on long runs 44
 Warm up (and warm down) before test days and speed day workouts 45
 Prediction Time Trials (PTT) 45
 Test race workouts (WO) 46
 Team running 46
 Speed days 46
 Hills 47
 Long runs 47

7 5K TRAINING PROGRAM: BEGINNER OR COMEBACK RUNNERS..... 48

8 5K TRAINING PROGRAM: VETERAN RUNNERS/TIME IMPROVEMENT 57

**9 2 MILE TRAINING PROGRAM (ALSO 3000-3200 METERS):
 BEGINNER OR COMEBACK RUNNERS..... 67**

**10 2 MILE TRAINING PROGRAM (ALSO 3000-3200 METERS):
 VETERAN RUNNERS/TIME IMPROVEMENT..... 76**

11 1 MILE/1500 METERS: BEGINNER OR COMEBACK RUNNERS 86

**12 1 MILE TRAINING PROGRAM (ALSO 1500 METERS):
 VETERAN RUNNERS/TIME IMPROVEMENT..... 95**

13 RACING STRATEGIES FOR TEAMS AND INDIVIDUALS..... 104

14 DRILLS TO MAKE RUNNING FASTER AND EASIER..... 107

 Cadence or Turnover Drill..... 108
 Acceleration-Glider Drill 109

CROSS-COUNTRY RUNNING

15 HILL RUNNING TECHNIQUE AND FAQs.....	111
Top mistakes made when running hills in races.....	111
Hill running concepts	112
Uphill running form during races and average runs.....	112
16 HILL TRAINING FOR STRENGTH AND RACE PREPARATION	113
The hill workout.....	113
Hill workout running form	114
Hill training strengthens lower legs and improves running form.....	115
Running faster on hills in races.....	115
Downhill form.....	115
Biggest mistakes: Too long a stride, bouncing too much.....	116
17 CROSS-TRAINING: GETTING BETTER AS YOU REST THE LEGS.....	117
18 THE GALLOWAY RUN-WALK-RUN METHOD	122
19 INJURY PREVENTION AND CARE	126
Common causes of injuries.....	127
Aggravating factors.....	128
How do you know if you are injured?.....	129
You can take 5 days off from running with no significant loss in conditioning	129
Quick action can reduce recovery time needed	129
How to train while injured (if injury allows).....	129
Reducing risk of speed injuries	130
Staying in shape when injured.....	130
How to return to running.....	131
Injuries from running form mistakes.....	131
The "shuffle"	132
Speedwork increases injury risk.....	132
Correct posture can reduce aches and pains	132
Cramps in the muscles	133
Exercises that can prevent/treat injuries	135

20 DEALING WITH THE HEAT	138
Running the long workouts during summer heat.....	139
Heat disease alert!.....	141
21 TROUBLESHOOTING PERFORMANCE	143
Times are slowing down at end.....	143
Slowing down in the middle of the race.....	144
Nauseous at the end.....	144
Tired during workouts.....	144
22 PROBLEMS AND SOLUTIONS	146
Side pain.....	146
I feel great one day...and not the next.....	147
Upset stomach or diarrhea.....	148
Headache.....	149
23 INJURY TROUBLESHOOTING... FROM ONE RUNNER TO ANOTHER	151
Quick treatment tips.....	151
Muscle injuries.....	152
Tendon and foot injuries.....	152
Knee injuries.....	152
Shin injuries.....	152
Starting running before the injury has healed.....	153
Best cross-training modes to maintain your running conditioning.....	153
Treatment suggestions—from one runner to another.....	154
Choosing the best shoe for you.....	157
24 THE CLOTHING THERMOMETER	161
25 PRACTICAL EATING ISSUES	164
Sweat the electrolytes.....	165
Get insulin working for you.....	166
Eating during exercise.....	166
It is important to reload within 30 minutes after exercise.....	167

CROSS-COUNTRY RUNNING

26 THE FINAL COUNTDOWN BEFORE A RACE 168

- The afternoon before..... 168
- The carbo loading dinner..... 169
- Drinking..... 169
- The night before..... 169
- Packing list..... 170
- Sleep..... 170
- Race day checklist..... 171

27 MENTAL TOUGHNESS 174

28 PRODUCTS THAT ENHANCE RUNNING..... 180



DEDICATION

Several years ago, the admissions director of an Ivy League university was asked for one or two high school activities that would give an applicant an advantage in being accepted to his institution, if they were on the waiting list. Without hesitating, he put cross-country at the top of the list. Cross-country runners, he said, have a special type of discipline and are willing to work very hard physically and mentally without receiving recognition. This combination of characteristics produced successful graduates who could handle the pressure-packed university culture.

This book is dedicated to the thousands of cross-country athletes who would not usually be selected for sports that are supported by cheerleaders. On many days, they are huffing, puffing and sweating before most of their fellow students are awake, and have finished a challenging workout before the football players report for practice. They run alone through rain, cold or snow because the workout was listed on the schedule. Exhausted, with half a mile left in a race, they give it everything they have left to help their team.

Cross-country runners sacrifice social activities to study and run. In the process, hidden sources of strength, creativity and confidence are discovered which are applied to everything else in their lives. I dedicate this book to all of those who have discovered the real power of cross-country, and those who are about to do so.



INTRODUCTION

CROSS-COUNTRY CHANGED MY LIFE

Like many children in Navy families, I attended 13 schools by the time I finished the 7th grade. At this point my father became a teacher, we moved to Atlanta, and my new school required each boy to work out with an athletic team after school every day. Because of the moves, I had avoided sports and exercise, did not have sports skills, had become lazy and had gained a lot of weight.

My patchwork of educational experiences had not prepared me for the demanding and competitive academic environment at this prep school, and I was struggling. The principal's comment on the report card was "A little more of a push next year and Jeff will make the top half of the class." I was already studying more hours every week than most of the students I knew, who were scoring better on tests. I believed that I was intellectually inferior.

During the Fall I tried football, which was a total disaster from my perspective, and that of my coaches. Before choosing a sport for the next quarter, I asked several of the other lazy kids for their choices and was surprised to hear that many had chosen Winter Track

Conditioning. The consensus among the slackers was that the track coach was the most lenient in the school. "Tell him you are running on the trails, and you only have to jog 200 yards to the woods and hide out."

I did just that for two days. On the third day, an older athlete I liked looked at me and said "Galloway, you're running with us today." I quickly came up with my strategy: as we entered the woods I planned to grab my hamstring, claiming a muscle pull. But the jokes started right away, and I kept going to hear the punch line. As I began to get really tired, they started telling gossip about the teachers. I didn't last long the first day, but pushed a bit farther with them day after day and started joining the political and psychological arguments.

Most of these cross-country runners were on the academic honor roll. But the controversial arguments led me to believe that I was just as intelligent as the others. Each academic period my grades improved and I, too, made the honor roll. More important, I had become a member of the group and set a new standard for myself due to group expectations.

I was most surprised about how good I felt after a run. The after-run attitude boost was better than I had experienced after any activity during my young life. The camaraderie and fun during those runs kept me coming back and after 10 weeks I was hooked on endorphins and friendship. I continue to be... more than 60 years later.

It was commonly known, even back in the 50s, that over half of the cross-country team members were among the best students and leaders in school organizations. University of Illinois Professor Charles Hillman, as reported by *Newsweek* magazine, noticed that the women's cross-country team set the curve on his neuroscience/ kinesiology tests every semester. So he started a study of elementary children comparing physical activity with academic achievement. He discovered that the kids who were fitter were also the best students. Various studies around the world have found the following:

- Regular exercise increases the level of BDNF (brain-derived neurotrophic factor), which is necessary for learning, memory and higher brain activities.
- Regular aerobic exercise stimulates growth of new brain cells, at any age.
- Regular vigorous exercise causes existing nerve cells to work quicker and more efficiently.
- Even one 30-minute aerobic exercise session stimulates areas in the brain needed for critical thinking and produces better test results than before the exercise.

So there's more to it than the physical benefits. That experience continues to enrich my life.



A NOTE TO COACHES

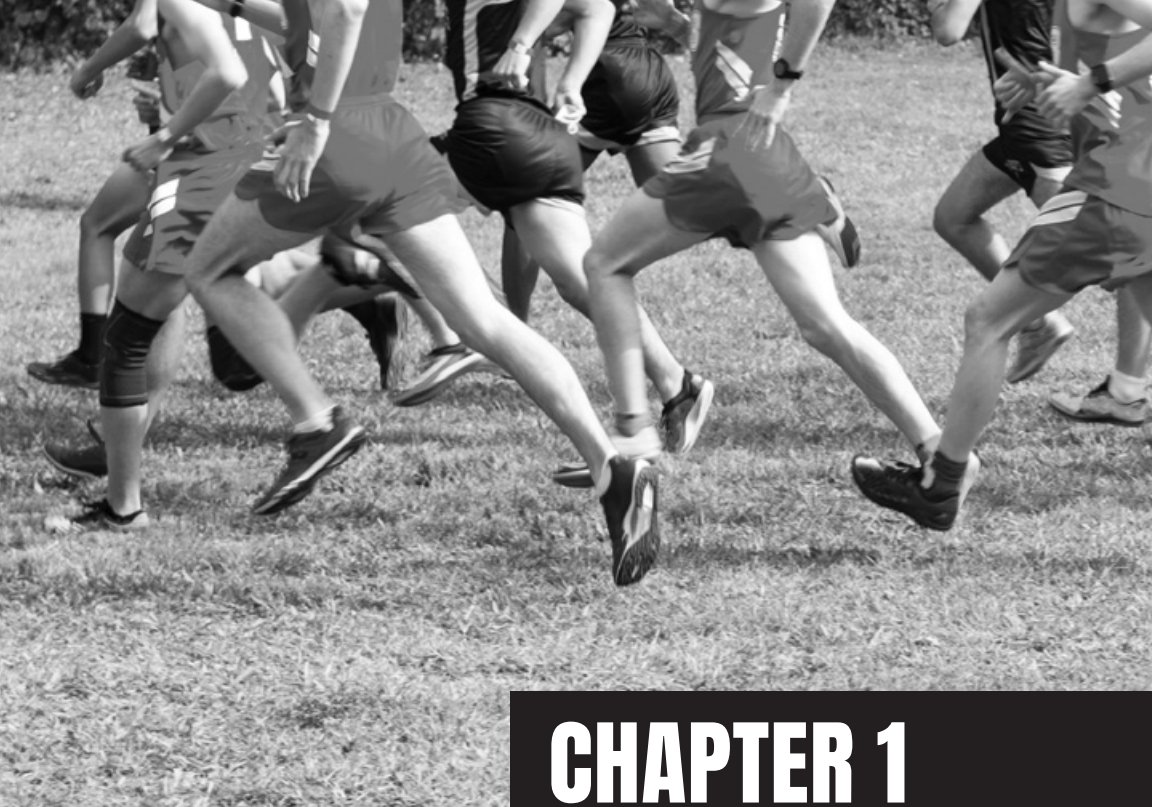
Cross-country kids are special. They tend to develop a spirit that drives them in everything they do. As you lead them, you have a chance to help them improve the quality of their lives, for the rest of their lives. The greatest hope is that they will become life long exercisers. Kids who run regularly tend to do better in school and in life.

The process of becoming an athlete adds another wonderful opportunity. Even the kids who join the team to hang out with their friends often surprise themselves and their coaches with their accomplishments. From the first year, most of these first timers have to push themselves to unknown limits. Drawing on the combination of body, mind and spirit they discover that they have more resources than they ever imagined.

With the right combination of nurturing and challenging you can help them learn from each setback and become a significant influence in their lives.

Many of the workouts will be tough. Your challenge is to insert some fun into every day possible. Better yet, set up the dynamics of personalities so that the athletes create the fun. It is possible to have both.

If you enjoy the journey, your athletes will find a way to do so as well.



CHAPTER 1

STAYING INJURY-FREE

The most common reason why cross-country runners don't achieve their goal is that they get injured.

HOW TO STAY INJURY-FREE

1. Be sensitive to your "weak links."
2. Gradually increase the amount of distance.
3. For at least the first two weeks of the preseason, run every other day.
4. Don't do any faster speedwork running during the first three weeks.
5. Fast training needs to be gradually integrated into the schedule.
6. At the first sign of a weak link irritation, reduce training and take 1-2 days off.
7. If there is any question about the severity of the injury, see a doctor who wants you to run.
8. As one returns to running, "stay below the threshold of irritation."
9. Read chapter 19, Injury Prevention and Care, for further details.

CROSS-COUNTRY RUNNING

CURB THE ENTHUSIASM

During the preseason conditioning and during the first two weeks of cross-country training, most athletes are highly motivated and want to improve quickly. The most common cause of cross-country injuries, in my experience, has been running too fast during this adjustment period, or adding mileage too quickly. In a team setting, early in the season, it's very common to hear runners say, "I should be able to run as fast as John/Jill," and try to do so. The less conditioned runner can easily get injured during one run by trying to keep up with a teammate who did more training over the summer.

WHY DO WE GET INJURED?

Pushing too hard, too soon, is the most common cause of cross-country injuries that have been reported to me over the decades. Almost all of these can be prevented if runners will begin their training at their current level of conditioning (and not that of a more fit or able friend), gradually increase the duration and intensity, and insert sufficient rest between stress workouts.

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

BE SENSITIVE TO YOUR "WEAK LINKS"

These body parts take on more stress when we work out. They are the first to ache, hurt or malfunction when we run a bit too fast or too far—or run too many days in a row. At the first sign of an irritation of a "weak link," take an extra day off as an insurance policy.

MINOR BREAKDOWN SIMULATES IMPROVEMENT

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 25%. But in most cases, the rest period after a workout will allow for healing of enough of the damage so that training can continue.

Stopping a workout when an injury occurs, and taking 2-3 days off at the beginning of an injury, can promote almost complete healing, or get the healing started. The first day back should be gentle and short. If there are no signs of injury, training can continue without compromising race performance at the end of the season. But running even the last mile of a workout with an injury can increase the damage dramatically and may limit the training for the rest of the season.

COMMON WEAK LINKS:

Joints—knee, hip, ankle

Muscles—calf, hamstring, quadriceps

Tendons—Achilles tendon, knee, ankle

Soft tissue (Fascia)—especially around joints, foot

Bones—foot and leg

Nerve tissue—foot and leg

Feet and ankle—just about any area can be overstressed in cross-country

MOST INJURIES ARE NOT FELT DURING THE WORKOUT THAT PRODUCES THEM

In some cases, pain-killing hormones, such as endorphins, will mask the damage at first. Even when the first aches and pains occur, most runners go into denial, ignore the first symptoms, and train until the stressed area breaks down. This usually results in significant downtime for repair or a significant reduction in performance for the season, or both.

HOW TO SUSTAIN PROGRESS AND AVOID INJURY

- A slight increase in training duration or intensity produces a minor breakdown of tissue. This stimulates each area that has been abused to adapt to a higher workload.
- If the rest between the challenging workouts is sufficient for the individual, the muscles, tendons, joints, feet, etc. rebuild stronger to accommodate a projected higher workload in the near future. For beginners this rest period is often 48 hours in the preseason and the early stages of the season. Veteran runners can often run easily, every other day, and avoid breakdown—but some veterans need at least 2 days off from running per week, strategically placed.
- During the days off, cross-training can provide other benefits, while the body is improving. Deep water running, for example can improve running efficiency. All body parts continue to adapt in structure, efficiency, and performance when there is a balance between workout stress and rest.