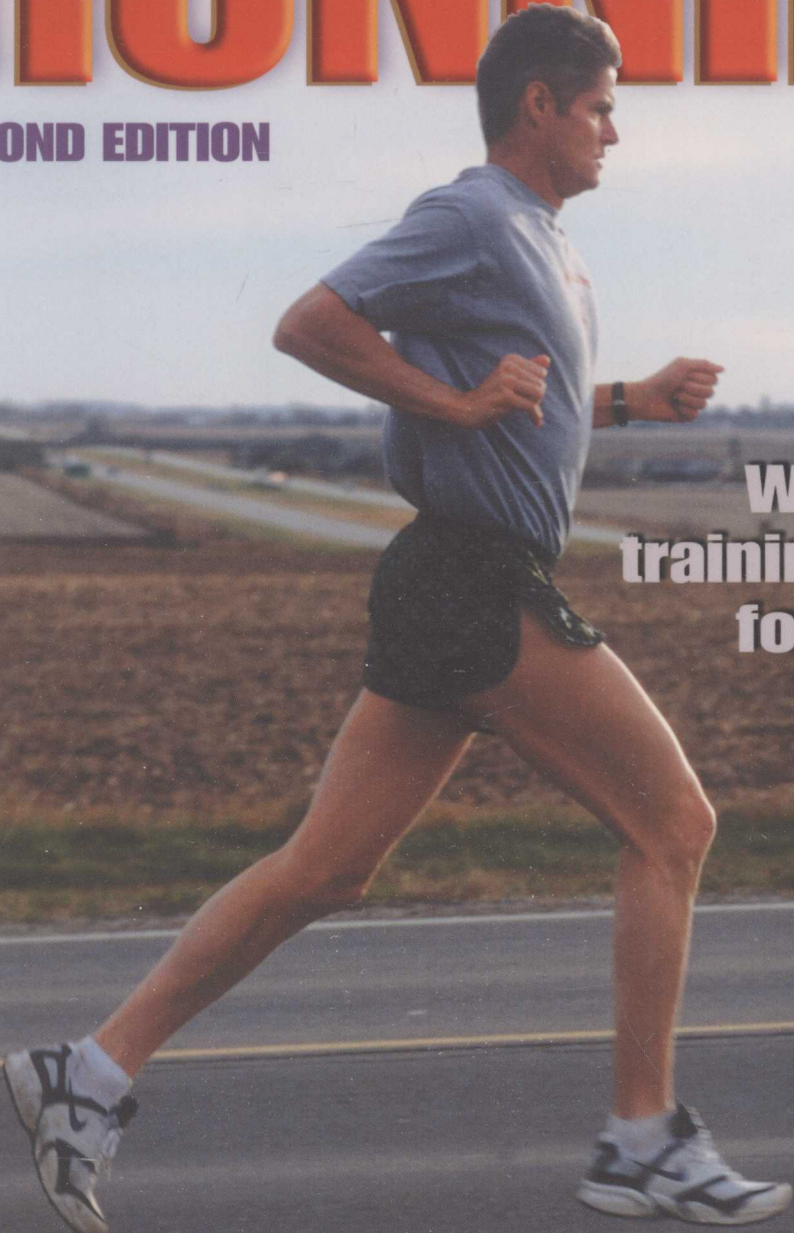


Fitness RUNNING

SECOND EDITION

A male runner in a blue t-shirt and black shorts is captured in a side profile, running on a paved road. He is wearing white socks and white sneakers with black accents. The background shows a rural landscape with fields and a distant road under a clear sky.

**Workouts and
training programs
for racers and
nonracers**

Richard L. Brown, PhD
with Joe Henderson

G82/58-2

Fitness Running

Second Edition

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with Joe Henderson



Human Kinetics

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Human Kinetics

Web site: www.HumanKinetics.com

United States: Human Kinetics

P.O. Box 5076, Champaign, IL 61825-5076

800-747-4457

e-mail: humank@hkusa.com

Canada: Human Kinetics

475 Devonshire Road Unit 100, Windsor, ON N8Y 2L5

800-465-7301 (in Canada only)

e-mail: orders@hkcanada.com

Europe: Human Kinetics

107 Bradford Road, Stanningley, Leeds LS28 6AT, United Kingdom

+44 (0) 113 255 5665

e-mail: hk@hkeurope.com

Australia: Human Kinetics

57A Price Avenue, Lower Mitcham, South Australia 5062

08 8277 1555

e-mail: liaw@hkaustralia.com

New Zealand: Human Kinetics

Division of Sports Distributors NZ Ltd.

P.O. Box 300 226 Albany, North Shore City, Auckland

0064 9 448 1207

e-mail: info@humankinetics.co.nz

Fitness Running

Preface

Nearly 10 years have raced past since Dick Brown and I last collaborated on the book *Fitness Running*. This revised edition is different from the first version because of all that has happened for Dick in the intervening decade.

During these years he coached Suzy Favor Hamilton and Vicki Huber onto the 1996 U.S. Olympic team. He led Marla Runyan into middle-distance running, which would take her to the 2000 Olympic 1500-meter final under another coach and then to the 2001 World Championships 5000, coached by yet another.

All of this is to be expected from Dick Brown. He has a long history of coaching world-class athletes, notably Mary Decker Slaney in her best years, which were topped by her two gold medals at the 1983 World Championships.

Dick is more than a running coach. He also has sent athletes to the Olympics in racewalking and cross-country skiing, as well as swimming in the Paralympics. Dick is more than a coach of world-beaters. The methods he prescribes for these athletes scale down well for use by runners of all levels. He's a scientist with an intimate understanding of what makes all exercising human beings work—and how they can work better. He combines scientific knowledge that few coaches can match with practical know-how that few physiologists can claim.

Dr. Dick has an inventive mind. He created the AquaJogger™, the most popular flotation device for deep-water training; and he holds a patent for the Individual Trainer, a handheld computer for calculating training efforts. For all these reasons he is an exercise expert who truly merits the title. His training plans continue to prove themselves even while he continues to improve them.

The progress of his programs make the second *Fitness Running* a different and better book than the one we wrote almost a decade ago. The cosmetic changes—moving from the somewhat rigid confines of a book

series and dispensing with color-coded workouts—are the least of its differences. And we gave this book chapters on specific racing distances, though its title might imply (wrongly) that it offers *only* programs for reclaiming basic fitness.

The books, old and new, do outline a stay-in-shape program. But Dick pays particular attention to racers who run track distances of 1500 through 10,000 meters and on the roads from 5Ks to marathons. He offers runners a menu of workout options, varying widely in type and degree of difficulty. He then combines these choices into sensible training plans that can be tailored precisely to the runner's abilities and goals. These programs have changed substantially since the first book, because Dick's techniques have evolved.

The general principles that support these programs apply to all ages and abilities and to both sexes. Only the specifics of distance and pace vary for, say, a high school boy trying to qualify for his regional meet, a woman in her 30s trying to make the Olympic Trials, and a marathoner in middle age hoping to win a spot on the Boston starting line.

Decide your goal, then trust Dick Brown, who has helped runners reach the highest levels of the sport, to lead you wherever you want to run.

—Joe Henderson

Contents

Preface

vii

PART I **Focusing on Running**

1	Assessing Your Running Level	3
2	Choosing Shoes and Gear	11
3	Checking Your Running Form	17
4	Supplementing Your Training	23
5	Monitoring Health and Fitness	35

PART II **Planning Your Program**

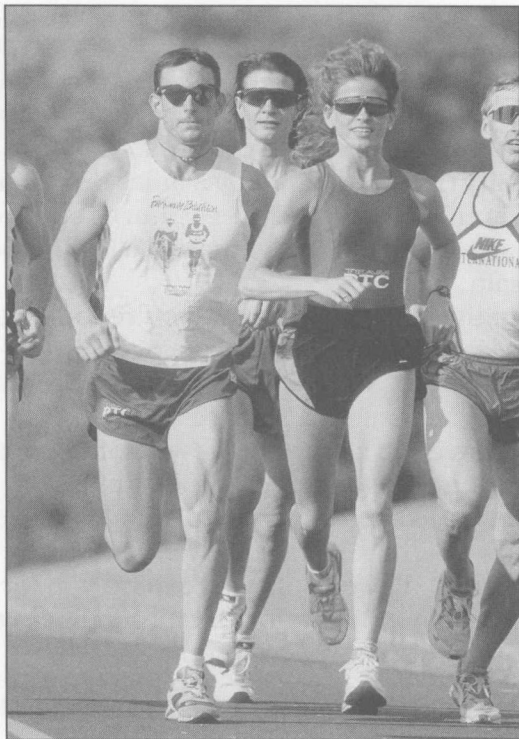
6	Program Setup	43
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7	Workout Ingredients	57
8	Progress Tracking	75

PART III

Scheduling Your Training

9	Beginning Training	83
10	Fitness Training	97
11	Recovery Training	111
12	Short-Race Training	117
13	Half-Marathon Training	133
14	Marathon Training	155
	Index	185
	About the Authors	189



Focusing on Running

You already know how to run. It's part of your ancestry and your upbringing.

Humans are a running species, and typical children are runners after their first steps. Few of us run right into adulthood, but we know the basic technique of putting one foot in front of the other at a faster-than-strolling pace.

So the question you want answered in this book isn't "How do I run?" It is "How can I run *better*?" The answer depends on who you are and what *better* means to you.

Let's say you ran track in high school, but that was many years and many pounds ago. The longer you've lapsed, the

longer and more carefully you must work to get back into running shape. We'll show you the path to better basic fitness.

Perhaps you already run, but your daily 2 miles or 3 kilometers through the neighborhood aren't pleasant. You get hurt too often, or you feel physically or mentally flat much of the time. We'll show you better ways to train without strain.

Maybe you're running trouble-free, but you're looking for more from your activity. You see announcements for a local 5K (3.1-mile) race and wonder if you dare enter it. We'll show you how much more enjoyable running can be when you make it a social event.

Let's say that you have run a race and now want to go farther or faster. You aim to improve your personal record (PR) in the 5K, to go for a 10K (6.1-mile) next time, or to increase your distances all the way up to a marathon. We'll show you how to race better.

In this opening section of the book, we prepare you for your next step in running. We lay the groundwork for this progress by addressing and assessing basic requirements for all runners:

- Testing your physical readiness to start running or to adopt a more demanding training program (chapter 1)
- Selecting proper shoes, clothing, and other equipment to make your running more comfortable (chapter 2)
- Refining your running technique so that you can cover ground more smoothly and swiftly (chapter 3)
- Supplementing your running training with strength and flexibility exercises and cross-training activities (chapter 4)
- Staying healthy and safe as you train to become a fitter, faster, more enduring, and happier runner (chapter 5)

Assessing Your Running Level

Your first task, before launching into the running program that we prescribe, is to determine your starting point. In other words, just how healthy and fit are you? This question applies as much to experienced runners as to beginners.

The terms *health* and *fitness* aren't synonymous. Health is merely the absence of disease or injury. Fitness is the ability to perform a specific physical task. You can be healthy in the sense of being illness-free and uninjured but still unprepared for the performance demands of running. Or you can be fit from recent aerobic training but unhealthy in the medical sense.

Determine how healthy and fit you are by taking the two entrance exams in this chapter. Let the results tell you where to begin. Be honest with yourself here. If you ignore key items in your medical history or overestimate your capabilities, running will lead you to the painful truth. To minimize pain and maximize improvement, you must draw the starting line where it is right for you.



It's important to determine your level of fitness before embarking on a running program.

Test Your Health and Fitness

Here we ask you to assess honestly your health history and your fitness habits. Choose the number beside the statement that best describes you in each of the 10 important health and fitness factors. Add your total score in table 1.1 to determine how to start training for running.

1. **Cardiovascular health:** Which of these statements best describes your cardiovascular condition? This is a critical safety check before you enter any vigorous activity.

(Warning: If you have a history of heart disease or if you are older than 35, enter a running program only after receiving clearance from your doctor and then with close supervision from a fitness instructor.)

- ☐ I have no history of problems. (3 points)
- ☐ Past ailments were treated successfully. (2 points)
- ☐ Such problems exist but need no treatment. (1 point)
- ☐ I am under medical care for cardiovascular illness. (0 points)

2. **Injuries:** Which of these statements best describes your current injuries? This is a test of your musculoskeletal readiness to start a running program.

(Warning: If your injury is temporary, wait until it heals before starting the program. If the condition is chronic, adjust the program to fit your limitations.)

- ☐ I have no current injuries. (3 points)
- ☐ Current pain does not limit activity. (2 points)
- ☐ Current pain limits activity. (1 point)
- ☐ Ongoing pain prohibits strenuous training. (0 points)

3. **Illnesses:** Which of these statements best describes your current illnesses? Certain temporary or chronic conditions will delay or disrupt your running program. (See warnings under "Injuries.")

- ☐ I have no current illnesses. (3 points)
- ☐ Current illness does not limit activity. (2 points)
- ☐ Current illness limits activity. (1 point)
- ☐ Ongoing illness prohibits strenuous training. (0 points)

4. **Age:** Which of these age groups describes you? In general, the younger you are, the more likely you are to be in good physical shape.

- ☐ 19 years or younger (3 points)
- ☐ 20 to 29 years (2 points)
- ☐ 30 to 39 years (1 point)
- ☐ 40 or older (0 points)

5. **Weight:** Which of these statements describes how close you are to your own definition of ideal weight? Being overweight is a major mark of unfitness, but so is being significantly underweight.

- ☐ Within 5 pounds, or 2 kilograms, of ideal weight (3 points)
- ☐ Above or below by 6 to 10 pounds, or 3 to 4 kilograms, of ideal weight (2 points)
- ☐ Above or below by 11 to 19 pounds, or 5 to 8 kilograms, of ideal weight (1 point)
- ☐ Above or below by 20 or more pounds, or 9 kilograms, of ideal weight (0 points)

6. **Resting pulse rate:** Which of these statements describes your current pulse rate on waking up but before getting out of bed? A well-trained heart beats more slowly and efficiently than one that's less fit.

- ☐ Fewer than 60 beats per minute (3 points)
 - ☐ 60 to 69 beats per minute (2 points)
 - ☐ 70 to 79 beats per minute (1 point)
 - ☐ 80 or more beats per minute (0 points)
7. **Smoking habits:** Which of these statements best describes your smoking history and current activity? Smoking is the number one enemy of health and fitness.
- ☐ I have never smoked. (3 points)
 - ☐ I smoked but quit. (2 points)
 - ☐ I smoke occasionally. (1 point)
 - ☐ I smoke regularly. (0 points)
8. **Most recent run:** Which of these statements best describes your running within the past month? The best single measure of how well you will run in the near future is what you ran in the recent past.
- ☐ I ran nonstop for more than 2 miles, or 3 kilometers. (3 points)
 - ☐ I ran nonstop for 1 to 2 miles, or 1.5 to 3 kilometers. (2 points)
 - ☐ I ran nonstop for less than 1 mile, or 1.5 kilometers. (1 point)
 - ☐ I have not run recently. (0 points)
9. **Running background:** Which of these statements best describes your running history? Running fitness isn't long-lasting, but the fact that you once ran is a good sign that you can do it again.
- ☐ I ran regularly within the past year. (3 points)
 - ☐ I ran regularly one to two years ago. (2 points)
 - ☐ I ran regularly more than two years ago. (1 point)
 - ☐ I never ran regularly. (0 points)
10. **Related activities:** Which of these statements best describes your participation in other exercises that are similar to running in their aerobic benefit? The closer the activity relates to running (such as bicycling, swimming, cross-country skiing, and fast walking), the better the carryover effect.
- ☐ I regularly practice similar aerobic activities. (3 points)
 - ☐ I regularly practice less-vigorous aerobic activities. (2 points)
 - ☐ I regularly practice nonaerobic activities. (1 point)
 - ☐ I am not regularly involved in physical activity. (0 points)

If you scored 20 points or more, you rate high in health and fitness for a beginning runner. You probably can handle continuous runs of 2 to 3 miles (3 to 5 kilometers), or 20 to 30 minutes.

At 10 to 19 points your score is average. You may need to take some walking breaks to complete runs of 2 to 3 miles (3 to 5 kilometers), or 20 to 30 minutes.

A score of less than 10 is low. You may need to start by walking, increasing the sessions to a half-hour before adding any running.

Table 1.1 Self-Analysis

Enter your scores from the health and fitness test in this chapter.

1. Cardiovascular health _____
 2. Injuries _____
 3. Illnesses _____
 4. Age _____
 5. Weight _____
 6. Resting pulse rate _____
 7. Smoking habits _____
 8. Most recent run _____
 9. Running background _____
 10. Related activities _____
 - Total score _____
-

Test Your Running Fitness

Now comes your final exam, so to speak. This is the more telling test, because up to now you've surveyed your health and fitness only with pen and paper. Now you check it where it counts—on the run.

Kenneth Cooper, MD, the leading authority in aerobic fitness, has long recommended a 12-minute run (or run-walk mix). We advise you to do the same to see how much distance you can cover in this period. The results of this test match up well with those obtained from sophisticated laboratory findings. The key result here is your ability to take in and process the oxygen that fuels your running. Exercise scientists call this ability your maximal oxygen uptake and abbreviate it as $\dot{V}O_{2\max}$. The volume (V) of oxygen (O_2) consumed by a person is expressed in milliliters per kilogram of body weight per minute of activity (ml/kg/min). Generally speaking, the more efficiently you transport and use oxygen, the faster you can run.

We use $\dot{V}O_2\text{max}$ as a benchmark of fitness throughout this book. The farther you run in 12 minutes, the greater your oxygen-uptake reading. The less distance you cover within that time limit, the lower your reading. Take this test as follows:

1. Use a local track or a flat stretch of accurately measured road. The standard running track is 440 yards, or 400 meters. Four laps equal 1 mile, or 1.6 kilometers.
2. Start at a pace you can maintain throughout the 12 minutes.
3. Increase the pace slightly in the last 1 or 2 minutes.
4. Aim to feel tired but exhilarated at the finish, not exhausted.
5. Look forward to repeating this test in the future with excitement, not dread.

Grade yourself by the standards in table 1.2. The results place you in one of four running-fitness categories:

- Superior: 8 3/4 laps or more ($\dot{V}O_2\text{max}$ of 60 and above)
- High: 7 1/2 to 8 1/2 laps ($\dot{V}O_2\text{max}$ of 50 to 59)
- Average: 5 3/4 to 7 1/4 laps ($\dot{V}O_2\text{max}$ of 35 to 49)
- Low: 5 1/2 laps or fewer ($\dot{V}O_2\text{max}$ below 35)

If your score is low, don't be discouraged. Consider these two reasons: First, this test score is merely a starting point for your progress. The lower it is the more room you have for improvement in later tests. Second, this result gives you a realistic basis for selecting training programs in this book. The programs must be based on your current ability.

Table 1.2 12-Minute Test

Note that the 12-minute test also is used later in the book but with a different purpose than drawing a baseline of fitness. In chapter 6 you use this test to determine racing potential and training pace.

Laps	Miles (pace)	Kilometers (pace)	$\dot{V}O_2$ max
LOW FITNESS			
3 3/4	0.94 (12:46)	1.5 (8:00)	22
4	1.00 (12:00)	1.6 (7:30)	24
4 1/4	1.06 (11:19)	1.7 (7:04)	25
4 1/2	1.13 (10:37)	1.8 (6:40)	27
4 3/4	1.19 (10:05)	1.9 (6:19)	29
5	1.25 (9:36)	2.0 (6:00)	31
5 1/4	1.31 (9:07)	2.1 (5:43)	33
5 1/2	1.38 (8:42)	2.2 (5:27)	35
AVERAGE FITNESS			
5 3/4	1.44 (8:20)	2.3 (5:13)	37
6	1.50 (8:00)	2.4 (5:00)	38
6 1/4	1.56 (7:42)	2.5 (4:48)	40
6 1/2	1.63 (7:22)	2.6 (4:37)	42
6 3/4	1.69 (7:06)	2.7 (4:27)	44
7	1.75 (6:51)	2.8 (4:17)	46
7 1/4	1.81 (6:38)	2.9 (4:08)	48
HIGH FITNESS			
7 1/2	1.88 (6:23)	3.0 (4:00)	50
7 3/4	1.94 (6:11)	3.1 (3:52)	52
8	2.00 (6:00)	3.2 (3:45)	54
8 1/4	2.06 (5:50)	3.3 (3:38)	56
8 1/2	2.13 (5:38)	3.4 (3:31)	58
SUPERIOR FITNESS			
8 3/4	2.19 (5:29)	3.5 (3:25)	60
9	2.25 (5:20)	3.6 (3:20)	62
9 1/4	2.31 (5:12)	3.7 (3:15)	64
9 1/2	2.38 (5:03)	3.8 (3:10)	66
9 3/4	2.44 (4:55)	3.9 (3:05)	68
10	2.50 (4:48)	4.0 (3:00)	70