

RUN 3 DAYS AND FINISH A MARATHON



FURMAN INSTITUTE OF RUNNING & SCIENTIFIC TRAINING

FIRST

Marathon Training Study

- ◆ August 2004 to December 2004
- ◆ >50 applicants, 25 selected
- ◆ 12 F, 13 M
- ◆ Ages 25-56
- ◆ Pre- and Post-training lab assessments
- ◆ 16 week training program
with specific workouts (distance and pace)
- ◆ Goal: Kiawah Island Marathon



Achieving as Much as Possible on a Minimum of Training

- ◆ Each workout should have a purpose
- ◆ As the total amount of training increases, the risk of overtraining and injury increases



Adaptations Needed for Optimal Performance

- ◆ Increase aerobic capacity
 - Improve ability to transport oxygen
 - Improve ability to use oxygen
- ◆ Raise lactate threshold
- ◆ Increase running speed
- ◆ Improve running economy



The Role of Training Intensity

- ◆ Most important factor for improvement
- ◆ Specific exercise intensities will stimulate adaptation



FIRST Research Study Laboratory Tests

- ◆ VO_{2MAX}
- ◆ Running economy



- ◆ Lactate threshold
- ◆ Body composition



Maximal Oxygen Consumption

- $\dot{V}O_{2\text{MAX}}$ is a measure of the ability to produce energy aerobically.



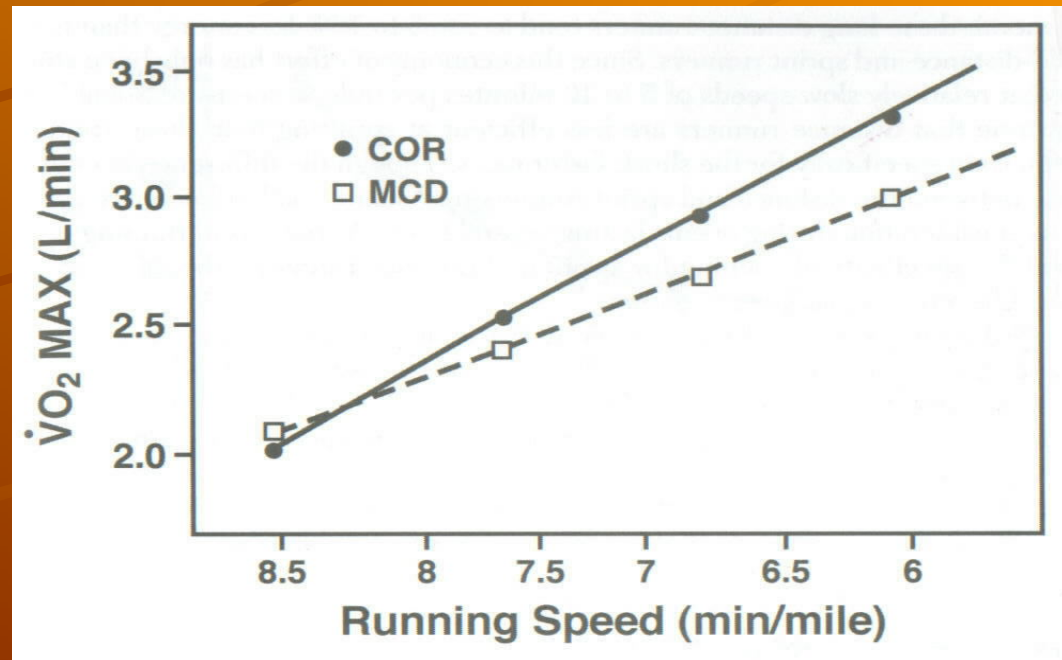
Lactate Threshold

- ◆ Lactate Threshold is a measure of metabolic fitness. Lactate is an organic by-product of anaerobic metabolism. The level of lactate accumulation in the blood is used to evaluate the intensity that a runner can maintain for extended periods of time.



Running Economy

Running economy is measured by the amount of oxygen being consumed relative to the runner's body weight and the speed at which the runner is traveling.



The Run Workouts

◆ Interval Training

◆ Tempo Run

◆ Long Run



Weekly mileage was approximately 20 – 35 miles a week

Workout Intensities and Purposes

◆ Interval Training

To optimize max VO_2 and improve economy & speed
~5K pace

◆ Tempo Run

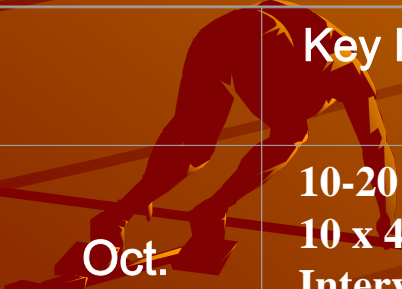
Raise lactate threshold
~10K and Marathon pace

◆ Long Run

Improve ability to rely more on fat as fuel
Marathon Pace plus 30 to 45 seconds pace per mile

Sample Week

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Cross-train	Key Run #1	Cross-train	Key Run #2	Off	Key Run #3	Cross-train

 <p>Oct. 25-31</p>	<p>Key Run Workout #1</p>	<p>Key Run Workout #2</p>	<p>Key Run Workout #3</p>
	<p>10-20 minute warm-up 10 x 400 (400 Recovery Interval-RI) @ 1:32 / 400 10 minute cool-down</p>	<p>6 mile run: 1 mile easy, 5 miles @ 7:22/mile</p>	<p>Long run Distance: 15 miles Pace: 8:07 per mile</p>

The Lab Results

◆ All 22 subjects who were able to complete the training program and perform the post-test improved on at least one variable

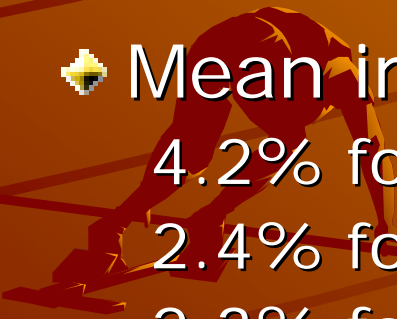
◆ Mean improvements

4.2% for maximal oxygen consumption

2.4% for running velocity at peak VO_2

2.3% for running velocity at lactate threshold

8.7% reduction in body fat



The Marathon Results

- ◆ 21 participants entered the marathon
- ◆ 2 entered the half-marathon
- ◆ 15 of 21 in the marathon established a personal best time
- ◆ 8 were marathon novices
- ◆ Average finishing time for novices
Males=3:48:52 (range of 3:33:21 to 4:07:09)
Females=4:16:27 (range of 3:56:43 to 4:46:36)
- ◆ Avg. finishing time for males = 3:49:23 (range of 2:56 to 4:51)
- ◆ Avg. finishing time for females = 4:20:42 (3:56 to 4:44)

Implications

- ◆ Three quality running workouts per week provided the means for running a marathon
- ◆ Two cross-training workouts substituted for additional running workouts reduced the total weekly running mileage and eliminated consecutive days run

What the Runners Said

- ◆ The 3-days-a-week running and cross-training seem to do the most with the least negative stress on the body.
- ◆ “It made me a stronger and smarter runner.”
- ◆ The FIRST training improved how I felt at the end of the marathon. Because my legs were not beaten to death by 6 days a week of running, I felt fresher and I was able to finish the marathon in an all-out sprint.”



What the Runners Said

- ◆ I REALLY liked running just 3 days/week. It was sooooo much easier psychologically than other marathon training programs. I found myself looking forward to the next run and feeling like I wanted to run more often than allowed.



What the Runners Said

- ◆ I LOVED running only 3 days/week. I've always felt that typical marathon training plans recommended too much running (junk miles). I also liked the variety of running fast, medium and slow for the 3 runs per week. I do think that cross-training is useful and I love doing many different activities (that's why running three days per week is so great). Overall, this was a fabulous program and I am VERY happy with the results.

What the Runners Said

- ◆ I would like to do another marathon and use this program to train. I liked having the workouts provided for you.
- ◆ Running 3 days a week maximizing quality, not quantity works for those who have full-time jobs who wish to improve and achieve high goals.
- ◆ If the FIRST training is offered again, I absolutely will be there!

What the Runners Said

- ◆ The program was also flexible enough to allow me to continue training even when I was working out of town. I do not have the time to allow for 5+ days of running per week.
- ◆ The cross training opened up a whole new world for me. I could improve conditioning and make my running better by running less. I felt the cross training was giving me rest from running that I had missed out on for years. I would recommend FIRST to anyone.
- ◆ Three runs a week fits better with my professional and family life."

What the Runners Said

- ◆ I have clear documentation that I ran faster and longer with less effort at the end of the program than at the beginning. I clearly see that I can maintain a pace one minute faster than before. I did not understand the power of the interval workout before. I never pushed myself as hard in my previous training. I think I improved due to the interval workouts first for the intensity and the cross training second because I could still workout hard but not fatigue my whole body."

NEXT LECTURE

Running, Aging, and Performance

March 6 at 4:00 p.m.

March 7 at 7:00 p.m.

