

chapter

14

Sprint Running

Speed, strength, and power are all essential factors in sprinting success. Speed can be improved through the effective use of conditioning and the basic mechanics of running. Leg strength is vital not only for power off the blocks but for increasing stride length. By improving hip, leg, foot, and ankle strength, muscles will contract more swiftly and leg speed will be increased. Arm strength is also important as arm action contributes to sprint speed. Arm action has to be powerful, regular, and quick. Cross-training exercises such as plyometrics, weight training, and StairMaster are useful in increasing leg and arm strength and power.

Sprint running is basically a pushing and pulling action where the runner has the feeling of pushing the ground backward, then quickly pulling the leg forward to begin the push over again. Sprint-assisted running, such as running downhill at faster speeds than can be achieved on level surfaces can be a useful cross-training method. Requiring the legs to move faster without increases in stride distance has been shown to be effective in increasing leg speed during competitive sprinting. Assisted towing with a harness at faster speeds is also a great training tool. It's important to note that sprint-resistance running at slower speeds than those required in the activity has been shown to be ineffective in increasing propulsive force.

Cross-Training Activity Matrix

Key	Exercises	Strength	Muscular Endurance	Aerobic	Anaerobic	Warm-up/ Cool-down	Flexibility	Rehabilitation	Agility and Balance
T	Treadmill		○	○	☆				
RM	Rowing Machine		○	○	○				
XC	X-C Ski Machine			○					
SM	StairMaster			○					
VC	Versa Climber		○		☆				
B	Bicycling			○	☆	☆		○	
S	Swimming			○			○		
AJ	Aqua Jogging			○	○			☆	
A	Aerobics			○			○		○
LS	Lateral Sports				○				○
WT	Weight Training	☆	☆					☆	
P	Plyometrics	○	○					○	
AE	Arm Ergometer		○		☆				
RB	Roller Blading			○					○
RJ	Rope Jumping			○	○	○			
AG	Agility Exercises								○
F	Flexibility Exercises						○		

○ = Recommended

☆ = Highly Recommended

Aerobic/Anaerobic Sample Training Programs

3-Days-a-Week								
Program	1	2	3	4	5	6	7	Focus
1		R*		XC		R		UB/LB
2		R		RM		R		UB
3		R		AJ		RB		LB

5-Days-a-Week								
Program	1	2	3	4	5	6	7	Focus
1	R	RM		R		S	R	UB
2	R	B		R		RB	R	LB
3	R	VC		R		XC	R	UB/LB

7-Days-a-Week								
Program	1	2	3	4	5	6	7	Focus
1	R	S	R	P	R	AE	R	UB
2	R	B	R	SM	R	AJ	R	LB
3	R	XC	R	RJ	R	VC	R	UB/LB

*R = Running

Estimated Training Emphasis (percent)			
Aerobic	Anaerobic	Combination	Competition Distance
	98	2	100-200 meters
5	80	15	400 meters

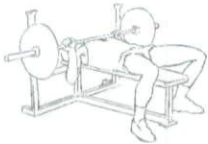
Weight Training Exercises

3-DAYS-A-WEEK



← **Squats**
3 Sets / 10 Reps
(see page 50)

Crunches →
1 Set / 25-75 Reps
(see page 48)



← **Bench press**
3 Sets / 10 Reps
(see page 42)

One-arm dumbbell rowing →
3 Sets / 10 Reps
(see page 43)



← **Back hyperextension**
1 Set / 10-15 Reps
(see page 49)

Tricep pulldowns →
1-3 Sets / 10 Reps
(see page 47)



← **Bicep curl**
1-3 Sets / 10 Reps
(see page 45)

ADDITIONAL EXERCISES (OPTIONAL)



← **Four-way hip exercises**
1-3 Sets / 10 Reps each exercise
(see pages 51-52)

Upright rowing →
1-3 Sets / 10 Reps
(see page 44)



← **Shoulder dips**
1-3 Sets / 10 Reps
(see page 45)

Flexibility Exercises



← **Lower-leg and heel stretch**
(see page 66)

Back stretch →
(see page 66)



← **Groin stretch**
(see page 67)

Quadriceps stretch →
(see page 67)



← **Hamstring stretch**
(see page 67)

Hip flexor stretch →
(see page 69)



← **Shoulder and arm stretch**
(see page 69)

Modified hurdler stretch →
(see page 69)



Copyright of Cross-Training for Sports is the property of Human Kinetics Publishers, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.