

## Team Fisher House Training Information

It is estimated that up to 70% of runners will develop an overuse injury each year. While running is a healthy activity, you can have too much of a good thing. Many of the newer training programs recommend running as little as three times a week, with cross training on the other days. Cross training should be a non-running activity that ultimately improves your running performance. But what is the best type of cross training activity? The answer is...

---

**Plyometrics.** Sure, your running partner swears by Pilates. Members of your running group swim or cycle. Popular magazines advocate strengthening your core muscles or yoga. But the sports medicine literature has consistently shown that short term (6 to 10 weeks) resistance training, such as plyometrics, improves running economy and ultimately, distance running performance.

Plyometrics (also known as jump training) involves repeated rapid stretching and contracting of muscles by jumping and rebounding, in order to increase muscle power.

Studies of plyometrics and resistance (weight) training in runners have consistently shown they are the best way to improve running economy, which is a measure of how efficiently a person uses oxygen while running at a given pace. Even a small improvement becomes very important over long race distances. An improvement in running economy allows a runner to run faster over a given distance or to run longer at a constant speed, and therefore improve race performance.

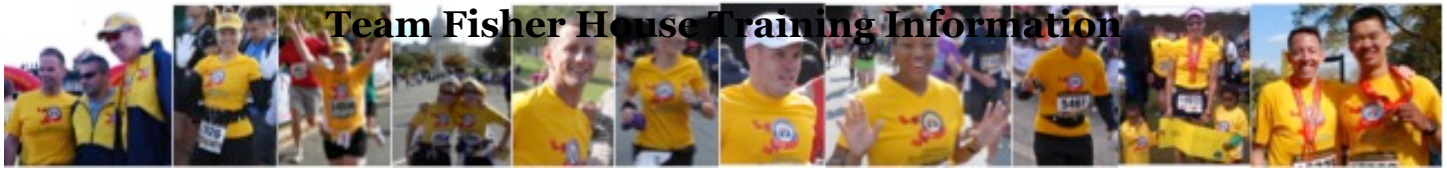
In one study, runners continued their usual running routine and added traditional weight training 3 days a week over 10 weeks. The weight training consisted of 2 to 3 sets of 6-20 repetitions of 14 different exercises. Athletes showed an improvement of 4% in their running economy.

Another study found that 9 weeks of plyometric exercises improved running economy by 8.1%, which resulted in a 3.1% improvement in 5K running time.

Why do plyometric exercises help running? They improve muscle coordination, mechanical efficiency, and help your muscles improve their storage and release of elastic energy, which reduces your workload. Performing plyometric exercises for 10 weeks will not increase your muscle size but will improve the way your body reacts as a whole. Plyometric training has been shown in several studies to be *more effective* than weight training in improving running economy, as they give you greater propulsion for the same or less energy. Add plyometrics as your cross training exercise and you could run faster using less energy, while decreasing the amount of time you are pounding the pavement!

[www.TeamFisherHouse.org](http://www.TeamFisherHouse.org)

Please note that the information contained in the Team Fisher House training updates are the opinions expressed by the Team Fisher House Training Support Staff, and do not necessarily reflect the opinions of other running "experts" or doctors. Therefore, it is advised that you seek additional support from knowledgeable specialists in your community if you require any training modifications or medical care. *Remember, it is wise to consult your doctor before starting a new exercise program.*



Here are the sports medicine experts' recommendations on cross training:

1) **If you are running a distance race for the first time or are simply looking to finish**, perform cross training activities which will increase your overall fitness. Runner's World compiled a list of the top ten best cross-training sports and activities for runners. Their list included:

- Cycling
- Resistance Training
- Soccer
- Deep-Water Running
- Stair Climbing
- Aerobic Dance
- Cross-Country Skiing
- Walking
- Racquet Sports (Tennis, Racquetball or Squash)
- Swimming

2) Use cross training to provide a mental break from running, balance your muscular system (running uses the same muscles repeatedly), and train your cardiovascular system while giving the running parts of your body a break.

3) Use an activity that is not too strenuous, that allows your running muscles to recover but still increases your heart rate. Your heart rate should be at or above 70 percent of your maximum heart rate (roughly 220 minus your age) most of the time.

4) If you don't want to replace your usual cross training with plyometrics, consider adding a few of them to the warm up or cool down of a running workout.

5) Listen to your body and consider your cross-training sessions as recovery workouts. You should enjoy your cross-training activity. Keep it fun!

6) Regularly check your morning heart rate before you get out of bed. An increased rate is a sign of overtraining, which can occur if you add too much cross-training too soon.

[www.TeamFisherHouse.org](http://www.TeamFisherHouse.org)

Please note that the information contained in the Team Fisher House training updates are the opinions expressed by the Team Fisher House Training Support Staff, and do not necessarily reflect the opinions of other running "experts" or doctors. Therefore, it is advised that you seek additional support from knowledgeable specialists in your community if you require any training modifications or medical care. *Remember, it is wise to consult your doctor before starting a new exercise program.*



**If you are running to break a specific time or want to optimize your race performance,** then plyometrics should be a part of your cross training.

Attached is an example of a 6 week plyometric training program (adapted from the European Journal of Applied Physiology; [The effect of plyometric training on distance running performance](#). Spurrs RW, Murphy AJ, Watsford ML. 2003 Mar;89(1):1-7.)

Start with 10 to 20 minutes of [a dynamic warm up](#). This prepares the body for the demands of a work out by increasing heart rate, respiratory rate, body temperature, and blood flow to the muscles. This enhances muscle elasticity. You should warm up both the upper and lower extremities, and should break a sweat during the warm up.

Perform 2 sessions of plyometrics per week for 3 weeks then 3 sessions per week for 3 weeks.

*Week 1- Session 1:* Two sets of ten repetitions of [Squat Jump](#) , [Split Scissor Jump](#) (Split Squat Jumps), and [Double Leg Bound](#) (Leap Frogs).

*Week 1- Session 2:* Two sets of ten repetitions of Squat Jump, Split Scissor Jump and Double Leg Bound

*Week 2- Session 1:* Two sets of 10 repetitions of Squat Jump, Split Scissor Jump, Double Leg Bound, and [Bounding](#)

*Week 2- Session 2:* Two sets of 10 repetitions of Squat Jump, Split Scissor Jump, Double Leg Bound, and Bounding

*Week 3- Session 1:* Two sets of 12 repetitions of Split Scissor Jump, Double Leg Bound, Bounding, and [Single Leg Forward \(or Lateral\) Hop](#)

*Week 3 - Session 2:* Two sets of 12 repetitions of Split Scissor Jump, Double Leg Bound, Bounding, and Single Leg Forward (or Lateral) Hop

*Week 4- Session 1:* Three sets of 10 of Double Leg Bound and Bounding; Two sets of 12 of Single Leg Forward Hop; Two sets of 6 of [Depth Jump](#)

[www.TeamFisherHouse.org](http://www.TeamFisherHouse.org)

Please note that the information contained in the Team Fisher House training updates are the opinions expressed by the Team Fisher House Training Support Staff, and do not necessarily reflect the opinions of other running "experts" or doctors. Therefore, it is advised that you seek additional support from knowledgeable specialists in your community if you require any training modifications or medical care. *Remember, it is wise to consult your doctor before starting a new exercise program.*



Week 4- Session 2: Three sets of 10 of Double Leg Bound and Bounding; Two sets of 12 of Single Leg Forward Hop; Two sets of 6 of Depth Jump

Week 4- Session 3: Three sets of 10 of Double Leg Bound; Two sets of 15 Bounding; Three sets of 10 of Single Leg Forward Hop; Two sets of 8 of Depth Jump

Week 5- Session 1: Two sets of 15 of Bounding; Two sets of 8 Depth Jumps; Two sets of 10 [Jump to Box](#)

Week 5- Session 2: Three sets of 15 of Bounding; Two sets of 10 Depth Jumps; Two sets of 10 Jump to Box and [Single Leg Tuck Jump](#)

Week 5- Session 3: Three sets of 15 of Bounding; Two sets of 10 Depth Jumps; Two sets of 10 Jump to Box and Single Leg Tuck Jump

Week 6- Session 1: Three sets of 10 Single Leg Hop Forward, Depth Jump, Jump to Box and Single Leg Tuck Jump

Week 6- Session 2: Two sets of 15 Single Leg Hop Forward; Three sets of 10 Depth Jump, Jump to Box and Single Leg Tuck Jump

Week 6 - Session 3: Two sets of 15 Single Leg Hop Forward; Three sets of 10 Depth Jump, Jump to Box and Single Leg Tuck Jump

If you would like to learn more about plyometrics, I recommend the article [Improve Running Economy with Plyometrics](#) from Running Times, or the in-depth book [Jumping into Plyometrics: 100 Exercises For Power & Strength](#) by Donald A. Chu. An [8 week sample of his program](#) can be found on [his website](#).

If you have any questions about plyometrics, or a running injury, I would be glad to answer them. You can post your question on the [Team Fisher House Facebook page](#) or e-mail me directly.

Enjoy your runs!  
Dr Connelly

[www.TeamFisherHouse.org](http://www.TeamFisherHouse.org)

Please note that the information contained in the Team Fisher House training updates are the opinions expressed by the Team Fisher House Training Support Staff, and do not necessarily reflect the opinions of other running "experts" or doctors. Therefore, it is advised that you seek additional support from knowledgeable specialists in your community if you require any training modifications or medical care. *Remember, it is wise to consult your doctor before starting a new exercise program.*