

# ISOMETRIC TRAINING & PISTOL SHOOTING

By Assistant National Pistol Coach Vladimir Chichkov

As with any other sport, practicing sport shooting requires physical strength, endurance and developing specific athletic qualities. I would like to take a moment and elaborate on one of these qualities as related to pistol shooting.

When observing the shooting process, we do not see a lot of dynamic activities but this does not mean that there is no muscular work. To execute a perfect shot we need a well-trained, controlled and immobilized system from the body to the pistol; moreover, a system that is oriented to the desired point. To achieve this immobilization we need a specific strength—*isometric strength*. What exactly is an isometric activity? It is muscular work without visible movement. For example, there is neither change in the angles of the joints nor change in the length of the muscles. Thus, shooting is primarily an isometric activity. We, as shooters, need to stand still and hold the pistol with no movement in order to aim properly and execute a shot. Most of our physical activities are completed by the larger muscles and muscle groups, but the isometric hold requires the use of the small muscles that are not commonly engaged in the dynamic (isotonic) exercises. This is why it is very important to understand the need for isometric exercises and building a plan to improve your isometric strength.

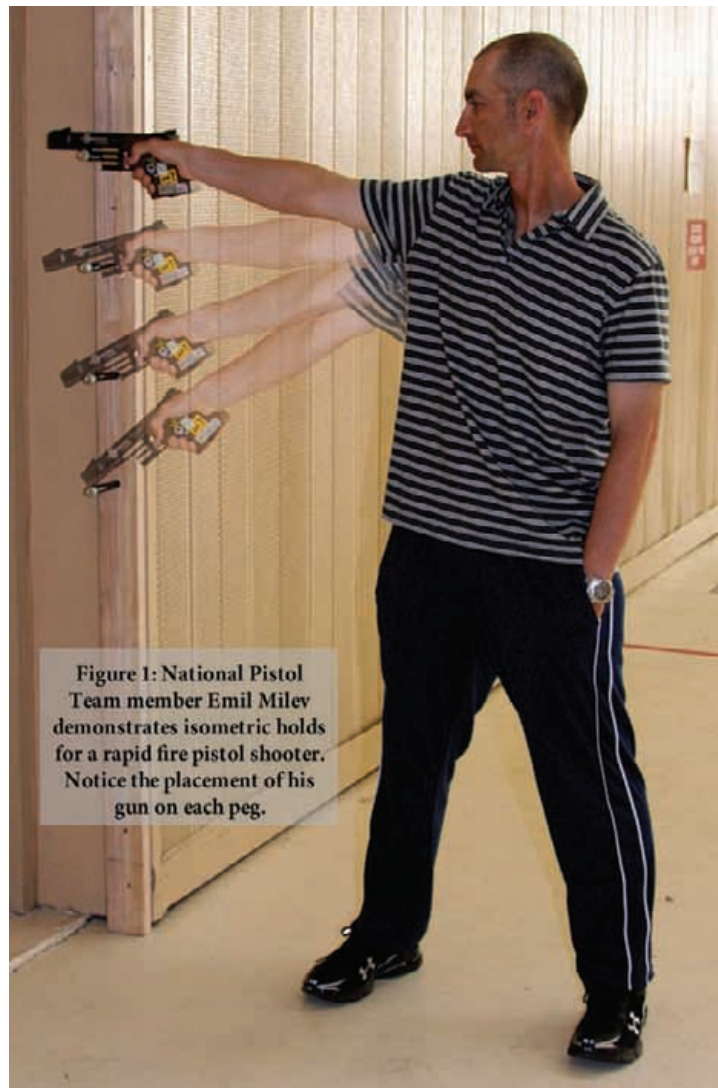
Since the muscles responsible for isometric activities do not participate in dynamic exercises, we cannot expect to train them while performing a typical workout. How do we train them? The biggest advantage of isometric training is increasing the hand and forearm strength for pistol grip. However, it is important to train with both hands (regardless of your shooting hand) in order to keep the harmony of your body. Isometric exercises work only for a very limited angle, and only at the angle you train. So if you train at 90 degree angle, you are not gaining power for the position at 45 degrees. That is why you have to exercise at multiple positions. In my practice, training at fifteen degree intervals is proven to give the best results (Figure 1). To achieve improvement in all participating muscles, it is important to exercise in all four directions UP-DOWN (Figure 2), LEFT-RIGHT.

Isometrics are divided in two groups based on the amount of power you use: maximal isometrics—when you use your maximum strength against an unmovable object (pushing against the wall or a specifically designed stand) or submaximal isometrics—when holding an object in a certain position (holding the pistol in the aiming zone). Practicing maximal power exercises is building your strength. The submaximal exercises are very often used for rehabilitation, but in our sport they can be used for maintaining the level of our physical condition.

For practicing you can use simple accessories. The

simplest one to use is a rope with a loop that can be put around the gun or with a knot so that you can hold it in your hand. Step on the rope and pull up with a straight hand. To change the angle, release a little bit of the rope and pull again. To exercise in the opposite direction you need to attach the rope to the ceiling (and not to dry wall please, I don't want to be held responsible for damaging your living room) and pull down. Having loops or knots at different heights will allow you to practice different angles.

You can make another easy accessory with a two foot by four foot wood stud. Put four six-inch lag screws at different heights (corresponding to 45, 60, 75 and 90 degree angles). Then, insert the screws in precut pieces of rubber hose to make it more comfortable. Cut the top of the two foot by four foot stud so that it fits in the door frame. Make sure the stud is steady, and then you are ready to practice. You can



use a toy gun (so that you do not damage your competition pistol) or just push with your fist up and down against the lag screws. To exercise in the left-right direction you can push against the door frame. For safety, make sure that your finger is outside the trigger guard of your pistol and that your gun is unloaded.

There is no exact science to the organization of the drills. The general consensus is for one to three groups of five short attempts at any of the desired angles and directions. The length of the attempts is usually five to 10 seconds with maximal strength. Don't forget to take a 15 to 30 second break between the attempts and rotate the right and left hand after each group. Three to five minutes breaks between the different directions are recommended.

Isometrics can be used for strengthening your entire body. Just determine which muscle groups you need to train and develop your exercises following the principles we just discussed.

Do not forget to properly warm up and never over-do it. You will see results in two to three weeks even if your attempts are as short as two to three seconds. If you are practicing air and free pistol you can train only at 90 degrees, but it is always beneficial to practice at multiple angles. For the sport and rapid fire pistol events, multiple angles drills are a must. I wish you all straight shooting and good luck!



Figure 2: The UP-DOWN series of isometric training for pistol shooting. Keep your training even by placing the pistol both above and below each peg.

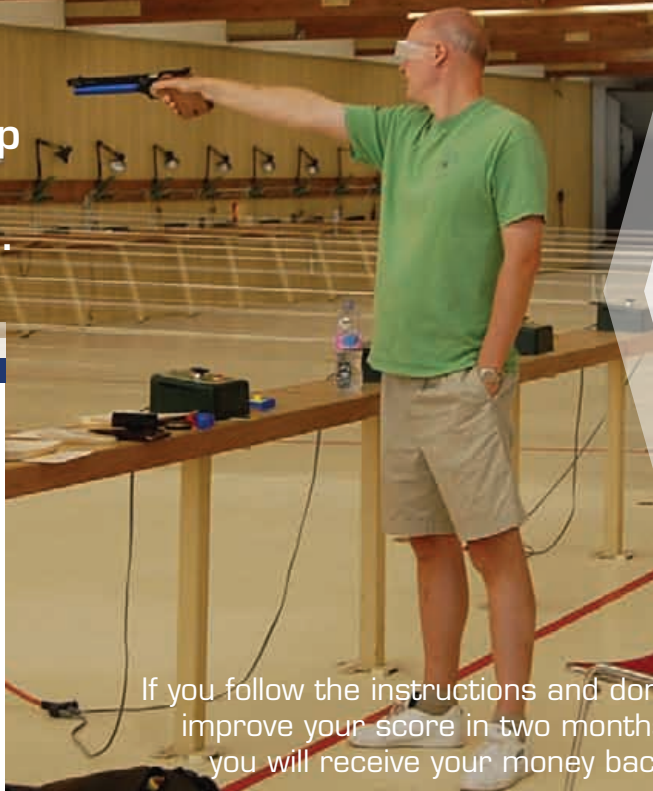
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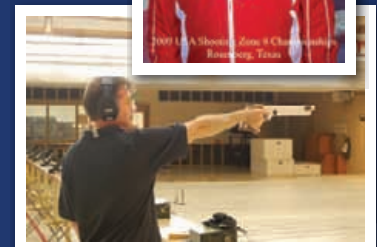
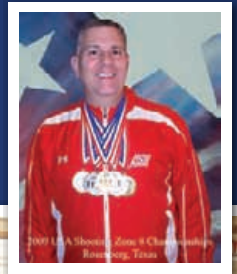


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**Silvano Lyra** is a 1999 USA/NRA International Advanced Shooting Coach who has coached gold and silver medalists at the Pan American Games and 5 Olympians in the 2000 & 2004 Olympic Games in the 10m air pistol element of Modern Pentathlon.

### Coach's Philosophy

*The soft overcomes the hard, the slow overcomes the fast, let your workings remain a mystery, just show people the results.*

-Lao Tzu