

# Qualities required for athletes of pistol shooting

Mark McKean



For every sport an athlete participates in there is a unique series of essential physical qualities required for the athlete to perform well. With some sports such as marathon running or 100m sprinting, the essential physical qualities may appear obvious. For other sports such as pistol shooting, it may appear as if there are only some very basic physical qualities required.

When you look at the sport of pistol shooting in more detail, it slowly becomes obvious how complex the relationships are between the different physical qualities that are required to make a good shooter. Pistol shooters should consider themselves as athletes and as a result make every effort to improve their physical qualities just as much as they practice to improve pistol shooting technique and shooting related skills. I believe there are some six essential physical qualities required by all shooters. They are in no specific order; general aerobic fitness, flexibility, strength, postural control and stability, hand eye coordination, and total body balance or awareness. Let's look at these qualities and why I believe them to be essential.

**General aerobic fitness** or endurance is the ability of the athlete to maintain the quality of their performance for an extended period of time. That time may require very little or a lot of physical effort. The sport may require a lot of concentration or very little. Regardless of what the physical output is, the athlete must have a suitable level of aerobic fitness, not only to compete but also to train. As we know training is often more physically challenging than the event itself. So fitness for your sport is an essential quality that must be developed by all shooters.

**Flexibility** and **strength** go hand in hand. You need to have good range of movement about each joint, but that movement must also have suitable levels of strength throughout the range it can move. If an athlete has poor flexibility, it means the strength-flexibility ratio is not balanced and some muscles will be tighter than they should be and others weaker than they should be. The movements required for shooting must be easily achieved and require the least amount of effort to do so. If the athlete finds it

difficult to achieve the body or arm position or is unable to sustain the required position, they will have to expend more effort and hence create more stress on the body instead of having movements that are smooth, efficient and effective or energy saving.

Having a good strength base, especially in the trunk and shoulder region, is essential for the athlete to lift and hold a pistol into the firing position many times over many days of training and competition. From my experience with the junior shooters at the Pistol Australia National Camp in July, it appears to me that the lack of basic strength in these athletes has already contributed to several posture related injuries, changes in body and shoulder position whilst shooting and in some cases pain from repetition of the movement.

As a result of this flexibility and strength balance, athletes learn how to control their bodies in different positions and movement patterns. It is this learned control of the body in these **postural positions** that is now commonly called **core stability**. This means that the athlete can be put into a position and remain in control of their posture and movement without becoming unstable. In pistol shooting it is this quality alone that is a significant contributor to the athlete being able to hold a very specific, sometimes less than ideal, physical posture whilst shooting. This can be as simple as ensuring that the shoulder and shoulder blade sit correctly so that the muscles moving the arm or holding the shoulder are still working as easily and efficiently as possible and thus being able to sustain the effort more accurately for longer.

The normal standing posture of an athlete is what the pistol shooting position is based on. Therefore if the normal posture has indications of poor alignment then this will carry over into the shooting posture.

You can see from the images below that Michelle's normal posture, left side standing has an anterior or forward tilt of the hips, indicated by an arched lower back and front of the hips being lower than the back. This posture has transferred to her shooting posture where Michelle tends to lean forwards from the hips to assume her shooting position.

These images show how the shooter has assumed a posture that is not aligned with a normal stable position of the human form in order to perform the act of shooting. Each postural change that occurs that differs to normal alignment reduces the efficiency, effectiveness, and stability of that posture and in turn the ability of the shooter to achieve an accurate shot.

Finally the last essential skills rely on the way our body understands what it is doing. This quality influences the ability to catch and throw accurately; to kick a ball, to line up the site of the pistol with the target and to maintain a stable balanced body position whilst performing a task. Both these skills can be developed and enhanced in athletes by simply applying some basic activities to the program that rely on **hand eye coordination** such as throwing and catching, and other **balance** activities such as standing on one foot to enhance the feedback the muscles send to the brain of the body's position to allow it to become more conscious of itself in these positions.

By increasing the athlete's fitness levels in each of these qualities only by a small amount, the overall resultant change in performance can be significant. The first goal is to establish a profile of the athlete's abilities in each of these areas, determine where the weaknesses lie, if any, and then design an appropriate program to develop these skills. This does take time and commitment on the athlete's part but it is the athlete we must develop first before they can perform better in pistol shooting.

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Left side normal posture



Left side shooting posture