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Coaching Column

Exercises for specific postural variations in pistol shooting Part 3

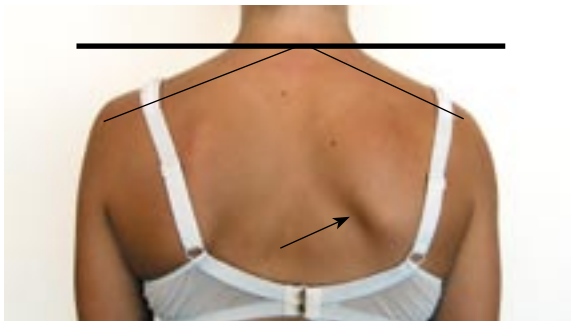
By Mark McKean
Dip. T (HPE/Sc), CSCS, ASCA Level 2 S&C Coach, MAAESS

In this, the final article relating to postural variations, I will focus on the posture of the shoulder and shoulder girdle (shoulder region). The shoulder is by far one of the most unstable joints in the body. Structurally there is only one bone, the Clavicle (collar bone) connecting the arm and the scapula (shoulder blade) to the trunk. Unlike the hip joint, which is also a ball and socket joint, the shoulder joint has a very shallow socket and gains very little stability from this shallow socket.

Instead, the control and stability of the shoulder is reliant on the joint capsule, ligaments, tendons and muscular structures, which surround the joint. So basically we have this massive structure of the shoulder blade, upper and lower arm and about 30 muscles hanging off the trunk by just the collar bone and the soft tissue . This is the key reason why the shoulder has many possible variations from the norm and also why it is a common site for injuries and overuse problems.

To understand the ideal position for correct function, let's firstly look at some positions of the shoulder. Generally the shoulder position can be lower than ideal, more forward than ideal and more rounded than ideal.

Lower than ideal



Picture 1a

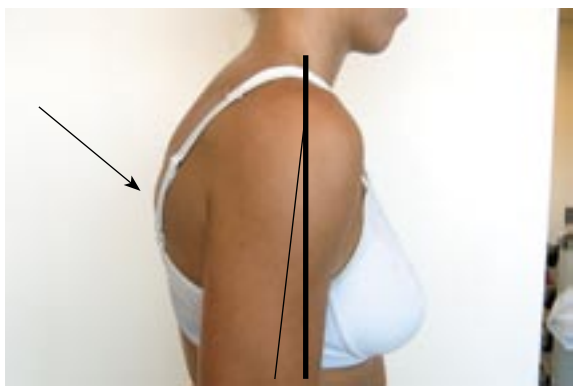
Picture 1b

In picture 1a the angle of the shoulders relative to the horizontal line is quite sloped. Most people will display slight angles of depression in the shoulder, but in excessive cases such as picture 1a, injury and instability are more common.

Other behaviours that may be associated with this dropped shoulder position can also cause further functional problems. The arrow on picture 1a highlights the shoulder blade, which is tilting away from the rib cage. If you can gently push your hand up under the shoulder blade, you can identify stability or strength related problems as the muscles that control this position are not doing their job.

In picture 1b, the right shoulder position is depressed, which also causes the right collar bone to drop as it loses its normal angle upwards to become more horizontal. Both the tilt of the shoulder blade and the angle of the collar bone are related to the shoulder being too far forward as shown in picture 2a below.

More forward than ideal



Picture 2a

In this picture (2a), you can see that the top of the shoulder is further forward than the elbow. The dark vertical line shows the normal angle of the arm as compared to the lighter line, which shows the true angle of the arm as it hangs from the shoulder.

When the shoulder sits too far forward, it tends to cause the shoulder blade to tilt as in picture 1a and the collar bone to drop its line as in picture 1b. The arrow in picture 2a also indicates the increased curve in the upper back, which is often found in people who display a forward shoulder position. The head will also tends to be situated more forward of its ideal vertical position. In this combination, the shoulder assumes a position that is weaker and more unstable as the true position of the joint is no longer held.

More rounded than ideal

Picture 3a

Picture 3b

In picture 3a you can see that the shoulder blades are quite far apart. The arrows indicate the inside edge of the shoulder blades. The shoulders are sloped, the upper back rounded in appearance and the arms tend to be in front of the body rather than by the side.

Picture 3b illustrates the front view of the rounded upper back appearance. The muscles of the upper neck appear to be well developed and the front of the shoulders appear to be positioned well forward.

What does all this mean to performance?

When the shoulder joint and the shoulder blade are properly positioned, the joint itself allows the arm to move in many directions with complete freedom. When the shoulder drops and moves forward the joint socket faces a different position, which will cause restrictions in movement in both the upwards and backwards direction.

The shoulder socket normally faces about 30 degrees forward of the side. As the shoulder moves forward and down this angle can change up to 50 degrees forward, which causes the arm movement to jam up against the rear and upper part of the socket as the arm is moved into the shooting position. This can be associated with overuse problems such as tendonitis, bursitis, muscular strain and muscular tears.

Another main problem with poor shoulder position is the interference of proper neural messages travelling down the arm to the muscles that maintain the shooting posture and the trigger finger. With interference of these messages due to poor posture, the timing of the shot may be influenced and fatigue of the shoulder muscles will be increased.

Ideally the shoulders should be square so that they appear to be close to level from a front on position. The front of the hand should also display 1-2 knuckles, which indicates that the arm is not rotated forwards out of position. From the side–on view the arm should be vertical and the shoulder kept in line with the neck. If this position is maintained as much as possible throughout the process of firing the shot, a more controlled postural position, less fatigue and more balance will be the result. Faster, cleaner messages will also be received from the brain when the actual shot is fired. ✪

Here are some exercises that can be done to develop good positioning of the shoulders. The shoulder position must be checked before starting these exercises and it is ideal to maintain this position at all times when exercising.

Side Lying Raise

Make sure the shoulder blade is set back and flat.
Slowly lift the dumb bell or small weight (1-2kg) up into a vertical position.
Keep the shoulder blade set as the weight is lowered back to the floor.
Complete 2 sets of 12-20 repetitions.

Shoulder Shrug & Hold

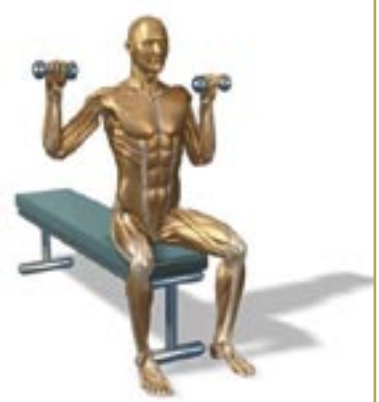
Holding a light weight, lift your shoulders up to your ears.
Hold for 6-10 seconds and then relax.
Repeat 4-6 times.

Side Raise

Holding a light weight (1-2kg), sit with back straight and shoulders set.
Lift the weight keeping your elbows slightly bent to horizontal then return the arms to the side.
Complete 2 sets of 12-20 repetitions.

Prone Raise

Lying face down, lift both elbows behind out to the side until they are level with your back
Hold for 3 seconds.
Lower back to the floor.
Complete 2 sets of 6-10 repetitions.



Shoulder Press

Holding a light weight, sit with the back straight and shoulders set back and up slightly.
Push the weight over head and return to the starting position at shoulder height.
Complete 2 sets of 12-20 repetitions.

Pull & Hold

Sit with the back and shoulders in the set position.
Pull a stretch chord until your elbow touches your side.
Hold 6-10 seconds.
Repeat 4-5 times each side.