

4 KEY FACTORS IN SHOOTING

| | PHYSICAL | TECHNICAL | TACTICAL | MENTAL |
|------------------|---|--|----------|--------|
| PHYSICAL | Eyes - need glasses? Flexibility - shooting positions - Stretching Nutrition - high fat content - long time to digest Rest - how much sleep needed before a competition? | | | |
| TECHNICAL | | Positions – outer – feet / arms etc Control - Breathing - Inner Aim 5- 8 sec. Trigger – squeeze Follow through | | |
| TACTICAL | | Right Equipment Plan for days leading to a competition? Rules - short of time - what to do? How to handle - poor light - heat How To Talk To Coach Who can talk to athlete on line? - only range officials What to do - make rifle safe / notify range officer / leave line to talk to coach Coach talk to Athlete - notify range officer who asks shooter to go to coach - “Gun Safe”? | | |
| MENTAL | | Goal setting PERFORMANCE vs OUTCOME Visualization - use worry as example (this is visualizing a potential event) Generate a Toolbox of ‘how to handle any problem’ | | |

Dehydration

Definition of Dehydration:

Dehydration refers to an inadequate amount of fluid in the body. Among athletes who participate in endurance sports or long workouts, dehydration can occur quickly. In general, a person is considered dehydrated when they have lost more than 2 percent of their body weight during exercise.

Adequate fluid intake is essential for athletes before, during, and after exercise. Whether to use sports drinks or just water depends upon your duration and intensity of exercise.

Symptoms of Dehydration

- Dry or sticky mouth
- Low or no urine output
- very dark colored, concentrated urine
- Not producing tears
- Weakness
- Dizziness
- Skin may 'tent' when pinched (doesn't bounce back quickly when released).

Water is the basis for life. The only thing more important is Oxygen

One of the first things to go away is eye sight -- a little important to a target shooter

Tips for Proper Hydration

- Start day with 250 ml water (8 oz) - Body loses water while you sleep
- Drink before you are thirsty - by time you are thirsty you are dehydrated
- Coffee / Tea are diuretics - (increase excretion of water from body)
- Coffee / Tea have caffeine in them - detrimental to target shooters
- Keep drinking water even when cold outside - you lose fluids through exhaled air
- Sport drinks not necessary in Target Sports - if you need taste – dilute 50%
- In a match:
 - At start of shooting - drink 450 to 650 ml of water about 1 hour before
 - During match drink about 250 ml every 20 minutes
 - After match – push fluid even if you do not feel thirsty - 500 ml?

Can you drink too much?

Yes - triathletes for example can create conditions called water intoxication leads to seizures, cramps, comas.

Fluids to AVOID during Exercise:

Carbonated soft drinks, regular fruit juice, fruit drinks, lemonade, Energy drinks that contain a lot of sugar or caffeine. These fluids may cause stomach upset and cause your performance to suffer.

Sports drinks are better than plain water when:

- the exercise is intense (e.g. when playing soccer, hockey, basketball or interval training)
- the activity lasts longer than 1 hour
- you sweat a lot
- you wear a lot of protective equipment like in hockey or football
- the weather is hot and humid
- your fluid needs to be quickly replaced (e.g. during soccer tournaments or two-a-day training sessions)

Try using a sports drink only if you exercise for longer than 1 hour and if you sweat a lot.

HOW TO HOLD AND SHOOT YOUR RIFLE

When shooting. ACCURACY IS A FUNCTION OF CONSISTENCY, BOTH WITH THE RIFLE AND AMMUNITION, AND THE SHOOTER'S ACTIONS. You must hold the rifle the same way each time. You will practice holding the rifle, your sight picture, your breathing, and trigger manipulation through dry firing. You will practice building a good steady, stable, solid position each time, bone on bone, not held by muscle power. Although you have to exert some muscle control, the position should be a natural relaxed position to avoid muscle fatigue, tension, and shaking that occurs after muscles are overextended for any period of time. You will check your natural point of aim before each shot. NATURAL POINT OF AIM is a position that allows the rifle to point naturally at the target without any muscle tension required to hold it on point of aim. You should keep the same position each time, changing nothing, to maintain consistency, to keep your natural point of aim the same each time. Before beginning this portion, or preceding sections, or any exercises, you should stretch first to loosen up your muscles. Besides the natural relaxing effect of stretching, it helps to prepare you mentally as well. Being physically fit will help you shoot better, and if you are not physically fit, you should make it a point to become fit.

AIMING THE RIFLE

Begin the aiming process by aligning the rifle with the target when assuming a firing position. THE RIFLE SHOULD POINT NATURALLY AT THE DESIRED AIMING POINT. No muscular tension or movement should be necessary to hold the rifle on target. To check the Natural Point of Aim (NPA), you assume a comfortable, STABLE, firing position. Place your cheek on the stock at the correct stock weld and breath, and entering the natural respiratory pause, look away from the sight moving only your eye and relax. Let the rifle drift to its natural point of aim, then look back through the sight. If the aperture remain on the correct position on the target, the natural point of aim is correct.

If the NPA is not correct, you must change your body position to bring the sights on the target. If muscles are used to bring the rifle to NPA, the muscles will relax when the rifle is fired and the rifle will begin to move to its NPA. Because this movement begins just before the weapon discharges, the rifle is moving at the bullet leaves the muzzle. This causes displaced shots with no apparent cause as recoil disguises the movement. By adjusting the rifle and body as a single unit, rechecking, and readjusting as necessary, you achieve a true natural point of aim. Once this position of established, you will then aim the rifle at the exact point on the target. Aiming involves three areas, eye relief, sight alignment, and sight picture.

EYE RELIEF

This is the distance from the firing eye to the sight, this distance is fairly constant. You should place your head as upright as possible with your eye directly behind the sight. This head placement allows the muscles around your eye to relax. Incorrect head placement causes you to have to look out the corner of your eye resulting in muscle strain, causing blurred vision and eye strain. Eye strain can be avoided by

not staring through the sight for long periods of time and correct stock weld alleviates eye strain as well by maintaining consistent eye relief.

BREATHING

You must exercise breathing control during the aiming process. The natural up and down motion of the chest while breathing, causes the rifle to move up and down while lying down. Breathing movement can also be side to side when sitting at a bench rest type table when your body is resting against the table.

You must therefore accomplish sight alignment while breathing and finish aiming while holding your breath. You do this by inhaling, exhaling, and stop at the moment of natural respiratory pause before beginning to inhale again.

A respiratory cycle lasts four to five seconds. Inhalation and exhalation take only about two seconds, thus between each respiratory cycle there is a pause of two to three seconds. This pause can be extended to ten seconds without any special effort or unpleasant sensations. You should fire during this pause when your breathing muscles are relaxed. This avoids strain on the diaphragm.

You should assume your firing position and breath naturally until your hold begins to settle.

The respiratory pause should never feel un-natural. If it is too long, the body suffers from oxygen deprivation and begins to send out signals to resume breathing. These signals produce involuntary movements of the diaphragm which interfere with the shooters concentration and lack of movement needed to make a shot.

TRIGGER CONTROL

Trigger control is the most important fundamental of marksmanship. It is defined as causing the rifle to fire when the sight picture is at its very best, without causing the rifle to move. Trigger Squeeze on the other hand is defined as the independent action of the forefinger on the trigger with a uniformly increasing pressure on the trigger straight to the rear until the rifle fires. Trigger Control is the last task to be accomplished before the rifle fires.

Proper trigger control occurs when the shooter places his firing finger as low on the trigger as possible and still clears the trigger guard, thereby achieving maximum mechanical advantage. He engages the trigger with that part of his firing finger (middle of the pad of the last digit) that allows him to pull the trigger straight to the rear. In order to avoid transferring movement of the finger to the entire rifle, the shooter should see daylight between the trigger finger and the stock as he squeezes the trigger straight to the rear. He fires the weapon when the sight is in a position to insure a properly placed shot.

Common issues include:

1. Jerking the Trigger. The trigger finger moves the trigger in a quick, choppy, spasmodic attempt to fire the shot before the sight can move from the desired point of aim.

2. Flinching. The shooter's entire body (or parts thereof) overreacts to the anticipated noise or recoil (jerks). This is usually due to unfamiliarity with the rifle.

3. Avoids Recoil. The shooter tries to avoid recoil or noise by moving away from the rifle or by closing the firing eye just before firing. This again is caused by unfamiliarity with the rifle and a lack of knowledge of the rifle's behaviour.

Trigger control is best handled by assuming a stable position, adjusting on the target, and beginning a breathing cycle. As the Shooter exhales the final breath approaching the natural respiratory pause, he secures his finger on the trigger. As the reticle settles on the target at the desired point of aim, and the natural respiratory pause is entered, the Shooter applies initial pressure to the trigger. He increases the tension on the trigger during the respiratory pause as long as the reticle remains on the desired point of aim to insure a properly placed shot. If the reticle moves away from the desired point of aim, and the respiratory pause is free of strain or tension, the Shooter stops increasing the tension on the trigger, waits for the reticle to return to the desired point of aim, and then continues to squeeze the trigger. This is trigger control. If movement is too large for recovery, or if the respiratory pause has become uncomfortable (extended too long), then the shooter should whenever possible, release the pressure off the trigger and start the respiratory cycle again.

FOLLOW THROUGH

Applying the fundamentals increases the odds of a well-aimed shot being fired. There are however, additional skills, that when mastered, make the first round correct hit even more of a certainty. One of these skills is "follow through". This is the act of continuing to apply all the shooter marksmanship fundamentals as the rifle fires as well as after the rifle fires.

Follow through consists of:

- Keeping the head in firm contact with the stock (stock weld) upon firing and after firing.
- Keeping the finger on the trigger pulling all the way to the rear when and after the weapon fires.
- Continuing to look through the sight when and after the weapon fires.
- Insuring the muscles stay relaxed when and after the weapon fires.
- Avoid reacting to the recoil or noise during and after firing.
- Releasing the trigger only after the recoil has stopped.

Good follow through insures that the rifle is allowed to fire and recoil naturally, and the shooter /rifle combination reacts as a single unit to such actions.

Prone Position Checklist

Adjust the equipment to the shooter, not the shooter to the equipment.

- 1) Body angle is 5-15 degrees to a line drawn perpendicular from the target face to the firing line.
- 2) Spine is straight.
- 3) The left arm, shoulder, hip, and leg form a straight line.
- 4) The right leg is drawn up thus rolling the body onto the left side. (helps reduce pulse beat)
- 5) The left forearm is at least 30 degrees to the ground.
- 6) The left hand does not grip the stock.
- 7) Check sling tension. No muscle used to hold up the rifle.
- 8) Shoulders level. Move right elbow to achieve this.
- 9) Straight line through the left palm, elbow, and shoulder. Hold a tray of drinks.
- 10) Shoulders are 90 degrees to the spine when viewed from above.
- 11) Buttplate is adjusted and placed firmly into the shoulder.
- 12) Right elbow supports very little weight.
- 13) Right hand grip pressure is proportional to the trigger weight.
- 14) Sling must not touch stock. ISU rule.
- 15) First knuckle of thumb should be under nose.
- 16) Eye relief is 2-6 inches. Eyeball to sight iris.
- 17) Rifle may be canted.
- 18) Check your muscle groups for incorrect tensions.
- 19) Place the spotting scope where it can be seen with minimal head movement.
- 20) To minimize lateral movement check for:
 - a) no hook in the left elbow
 - b) level eyes
- 21) Breathe in or out for slight vertical adjustments.

Adjust your position slightly to accommodate your body's daily changes.

Have someone take a picture of you in a good position for future reference.

Kneeling Position Checklist

Build your position then pick up your rifle

- 1) Clothing is comfortable and loose, not bunched behind left knee. Right boot may be unlaced.
- 2) Shooter faces about 15 degrees right of line of fire.
- 3) Right thigh angle is 20-60 degrees to right of line of fire. Very little weight is put on it.
- 4) The diameter of the kneeling roll is decided by how stable forward/backward the shooter feels.
- 5) The right foot should not be angled left or right. Place your tailbone on the heel of the shoe.
- 6) The left foot is parallel to the left thigh. May be turned inward slightly.
- 7) The lower left leg is vertical or slightly forward, never backward.
- 8) The spine is vertical when viewed from behind.
- 9) The top half of the spine slumps forward.
- 10) The sling supports the rifle and the left arm is relaxed.
- 11) The left arm is straight when viewed from above. Pretend you are holding a tray of drinks.
- 12) The left forearm and thigh form a straight line when viewed from the side.
- 13) The right hand is placed on the pistol grip to produce a straight back trigger pull.
- 14) The trigger finger is parallel to the barrel.
- 15) The right arm is relaxed and comfortable.
- 16) The right shoulder is relaxed.
- 17) Head is tipped forward slightly and the eyes are level.
- 18) Eye relief is 2-6 inches. Eyeball to sight iris.
- 19) The buttplate or hook is adjusted in a neutral position.
- 20) Check your muscle groups for incorrect tensions.
- 21) Rifle may be canted.
- 22) To minimize lateral movement check for:
 - a) no hook in the left elbow
 - b) level eyes
- 23) left shin vertical when viewed from the front
- 24) vertical spine when viewed from the back
- 25) center of gravity above a line drawn between the roll and the left foot

Adjust your position slightly to accommodate your body's daily changes.

Your kneeling scores should be very close to your prone scores.

Have someone take a picture of you in a good position for future reference.

Standing Position Checklist

Build your position from the feet up.

- 1) Feet are approximately shoulder width apart (or slightly more).
- 2) Feet are 90 degrees to the target. One foot may be slightly in front of the other.
- 3) Weight is evenly distributed over the feet. More weight may be over the left foot.
- 4) The legs are straight and the knees are not locked.
- 5) Hips face 90 degrees to the target.
- 6) Body is bent backwards to balance the weight of the rifle/body unit, and twisted to the left.
- 7) Left arm rests against the rib cage, and the left elbow is placed on the hip, if possible.
- 8) Left arm is a straight line when viewed from above.
- 9) Buttplate or hook is located lower than the other positions.
- 10) Right hand is placed on the pistol grip to produce a straight back trigger pull.
- 11) Trigger finger is parallel to the barrel.
- 12) Right arm is relaxed.
- 13) The shoulders are nearly level and relaxed.
- 14) Head is tipped forward slightly but the eyes are level.
- 15) Rifle may be canted.
- 16) Eye relief is 2-6 inches. Eyeball to sight iris.
- 17) To minimize lateral movement check for:
 - a) no hook in the left elbow
 - b) level eyes
- 18) no twist in the hips

Adjust your position slightly to accommodate your body's daily changes.

Have someone take a picture of you in a good position for future reference.