

## **Technique of Goalie Punt (for Women) (R foot kick)**

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### **Introduction**

The goalie is the only player in soccer who can legally handle the ball with the hands. The punt or drop kick is used by the goalie to clear the ball as far downfield as possible, since the ball is dropped out of the hands and is airborne at contact. The goalie may punt the ball when she makes a stop and has possession of the ball - she cannot be touched when she has the ball in the goal area. An effective goalie can punt the ball well down the field into their offensive zone, and this skill is an effective start for the attack. The job of the goalie is to clear the ball from the danger area near the goal as effectively as possible and as far downfield as possible (Crisfield, 1998). The punt is the kick with the greatest distance, since it is struck before ground contact while above the ground and has a higher trajectory and angle of attack than a kick from on the ground. The drop kick is a ball that is dropped by the goalie and is then kicked just after striking the ground - called a half-volley shot in other sports. The drop kick has a lower trajectory so will not travel as far but it will reach the receiver sooner as it is more like a line drive with a lower angle of release.

Most goalies have a ritual series of movements they perform just prior to performing the punt. This is much like the performance of a free throw in basketball, which may start with 3 dribbles of the basketball (Nash, 2009). A goalie should watch many world-class goalkeepers and see what they do just before they punt the ball. It is generally the same each time. They may bounce the ball two or three times before starting their approach (Figure 1). They may tap the toes of their kicking foot on the ground behind them. They may do a couple of quick squats to loosen up. It is important to do the same things in the same order each time and there should be a purpose to the ritual. Everything should be done to help the goalie relax and concentrate on the kick. The goalie has 6 seconds to get rid of the ball once she has picked it up, and she has the option of throwing or kicking the ball to a team mate.



Figure 1. Goalie bounces ball once prior to taking the punt downfield.

### **Run-up**

The goalie usually takes a 2-4 step run up, usually 3 steps (LaPrath, 2009), starting with a step onto the left foot, then the right foot, then a long step onto the left foot as the kicking leg is brought through for the kick. Each step should be slightly longer than the previous step, with the last step being the longest. The run up should be at an angle to the kicking direction, as this angled position leaves the kicking hip further behind the body and will generate more power. The goalie starts with the ball in both hands, but the left hand often comes off the ball as the kicking foot is landing. Starting the run up with both hands holding the ball may provide more consistency to the drop, and younger goalies may drop the ball with two hands to retain better control over the drop direction. Keeping two hands on the ball may also reduce the spin applied to the ball at release. It is usually more comfortable for goalies to drop the ball with only one hand supporting it, usually the hand on the same side as the kicking foot (LaPrath, 2009) as the ball is lined up more directly with the kicking leg. A right footed goalie should drop the ball with the right hand as this position squares up the shoulders and trunk to face the field (Nash, 2009) (Figure 9). However, use of the left arm to drop the ball can also be used for a right footed kick, as this technique keeps the right shoulder back and produces additional trunk rotation to assist with the force of the kick. As the left shoulder moves forward to drop the ball, the right shoulder moves back to produce a greater range of trunk forward rotation during the kick. As the ball is being dropped from the supporting hand, the arm is fully extended in front of the kicker's body with the fingers extended and the palm facing upward. The ball is allowed to roll forward off the ends of the extended fingers and directly downward (eHow Sports Editor, 2009), usually without any upward flick of the fingers. The ball is dropped directly downward, ideally with no upward force being applied to the ball by using a toss.

One common mistake made by many young or beginning keepers is that they throw the ball up in the air prior to the kick, rather than dropping it directly downward from the fingers. Some goalies toss the ball upward prior to the punt, which gives them a longer time to run up into the kick because the ball is in the air longer, but it also increases the difficulty of the skill. This initial upward movement makes it harder to time the ball contact, and decreases the chance of accuracy. However, some highly skilled goalies do toss the ball up prior to the punt (Figure 5), and this gives greater time for a longer run up, potentially providing greater velocity to the ball at impact.



Figure 2. Goalie has the ball in two hands as she takes a step forward onto the left foot. One common mistake many young or beginning keepers make is they throw the ball up in the air. That makes it harder to time, and decreases your chance of accuracy.



Figure 3. Goalie keeps both hands on the ball as she steps onto the right foot.



Figure 4. Goalie drops right hand off ball as she steps onto the kicking foot



Figure 5. Goalie tosses ball upwards prior to the kick, so ball is at shoulder level after the toss. This toss is more difficult to time than a direct drop.



Figure 6. Goalie can take an additional step into the kick when using an upward toss as she has a longer time to approach the ball.



Figure 7. Goalie moves left hand off the ball and drops it with the right hand as she steps onto the right kicking leg.



Figure 8. Goalie steps toward the kicking side (R) onto her right foot as the left hand comes off the ball.



Figure 9. Goalie drives forcefully off the right leg while ball is held in the right hand, as she is about to kick with the right foot. Pelvis is rotated to the right to increase pelvic range of motion into kick.

**Last step onto non-kicking foot**

Following the planting of the kicking leg the goalie takes a very long step onto the left (non-kicking) leg. The velocity of the body as this foot is planted is added to the total velocity of the ball in the kick. The step should be long enough that the goalie becomes airborne before planting the left foot pointing towards the target. The longer the step forward into the ball, the further the kicking leg is left behind the goalie and the greater the subsequent force of the kick. The left foot is planted with the toe pointing directly in line with the direction of the kick. This plant required lateral rotation in the left hip prior to touchdown as the hips are facing the right sideline due to the diagonal run up.



Figure 10. Long step into punt taken by elite goalie. Kicking leg and opposite arm are left well behind the body to maximally stretch the hip flexors and diagonal trunk muscles.



Figure 11. Long step into kick taken by elite goalie. Kicking leg (L) and opposite arm (R) are left well behind the body to stretch hip flexors and trunk muscles.



Figure 12. Long last step taken into kick by provincial level goalie, also showing excellent inertial lag of the non kicking side left arm.





Figure 13. Foot plant almost level with the ball, trunk tilted away from the support leg. Trunk tilt has increased the distance from the spinal and hip axes to the ball.

The ball is dropped as the goalie is taking off from the right leg, or the kicking leg. The player lands on the left foot with the knee and hip well flexed. The kicker retains this flexion in the support leg throughout the kick and the support knee remains flexed until the end of the follow through. The trunk is tilted slightly backwards and away from the kicking side and the neck is flexed forward while the eyes of the goalie remain focused on the ball (Buxton, 2000).

As the goalie lands on the left foot, the body remains tilted sideways away from the ball and the kicking foot. From the front view the left leg is tilted at an angle of  $40^\circ$  to the ground. This position increases the distance from the left hip to the point of contact with the ball and increases the length of the lever arm for rotation around the left hip (Figure 13). This position also increases the distance from the spinal axis to the point of contact of the foot to the ball, therefore increasing the contribution of the trunk to foot velocity. This position also raises the kicking foot off the ground so that it can contact the ball in a more extended position from the hip joint. This marked sideways lean is an important aspect of skilled kicking as it lengthens the lever arm for both rotation of the pelvis around the left hip as well as rotation of the trunk around the spinal axis (Figure 13).

The kicking leg is left well behind the kicker on foot plant, a mechanism known as inertial lag, or the tendency for more distal body parts to be left behind the trunk and more proximal segments. The further the kicking leg is left behind the kicker, and the greater the flexion in the kicking knee, the greater the range of motion into the kick and the greater the speed of the kicking foot. From a position well behind the kicker, the kicking leg assumes a position of maximum hip extension and maximum knee flexion, producing an eccentric contraction in the hip flexors and knee extensors as they control these backward motions. This position places the muscles of the anterior hip and knee on a stretch, and prepares them for the forceful concentric contraction to follow.



Figure 14. Kicking leg is left well behind the trunk with the kicking knee flexed greater than 90 degrees, support knee flexed past 40 degrees.



Figure 15. Both arms and kicking leg left well behind the body, support leg flexed and positioned well in front of the body.

### **Kicking motion**

The goalie must always keep the eyes on the ball and the head steady and focused downward on the ball (Buxton, 2000). The kicking leg is swung through from a position of maximal hip extension and knee flexion. This motion requires a forceful concentric contraction from the hip flexor muscles to pull the flexed kicking leg through toward the ball. As the kicking thigh is moved into rapid hip flexion, the knee continues to flex due to the inertial lag of the lower leg relative to the thigh (Figure 16). The hip is swung through a range of close to ninety degrees of flexion, and then decelerates as it approaches a position directly above the ball. The hip flexion movement appears to be one of the most important movements in producing ball speed in the soccer kick, and is significantly higher in more skilled players (Kawamoto, Miyagi, Ohashi, & Fukashiro, 2007). As the thigh decelerates, the lower leg starts to move rapidly into knee extension, so the ball is contacted at the point of maximum knee extension angular velocity. The ankle should be locked with the toe pointing down (plantarflexion of the ankle) through impact, and the ball should be contacted with the laces of the shoe. The instep just below the laces is the most rigid portion of the shoe for impact (eHow Sports Editor, 2009) and will produce the greatest resultant velocity. If the ball is contacted lower on the toe, the toe will “give” slightly and the impact will have a lower coefficient of restitution and the ball will not travel as far. The most important determinant of the speed of the ball after impact is the speed of the foot before impact, so foot speed is also of critical importance (Levanon & Dapena, 1998).

The ball should be contacted as it approaches the ground, so that the knee is approaching the position of full extension at impact. The ball is approximately 6-8 inches above the ground at impact, at a point just below the knee of the support leg (Nash, 2009). This position will give the greatest distance to the punt, which should be a high, arching kick with maximum distance down field.



Figure 16. Thigh has stopped rotation forward and knee is starting to extend from a maximally flexed position. Trunk is leaning back, eyes focused on the ball.



Figure 17. Just after contact, knee is extended, ankle is plantarflexed, right leg and left arm are in a similar position of flexion relative to the trunk.



Figure 18. Knee moves from maximal flexion to full extension just after impact with the ball. The right arm comes forward with the left leg and both are at the same angle to the ground at impact.



Figure 19. Non-kicking arm and kicking leg move forward past the trunk, eyes are watching the ball.



Figure 20. At contact with the ball, the trunk is leaning away from the kicking side at  $40^\circ$  and the right leg and the left arm are in front of the body

### **Arm Action in Punting**

Both hands hold the ball from underneath during the first step of the run up onto the right foot. A right-footed goalie should drop the ball with the right hand. As the right foot contacts the ground, the left hand comes off the ball and the left arm first swings forward into shoulder flexion as the ball is dropped with the right hand, then swings backward into shoulder horizontal abduction and shoulder flexion. The right hand drops the ball during toe off of the right (kicking) foot, then it too moves backward into shoulder horizontal abduction and shoulder extension (Figure 15). As the ball is

dropping down toward the ground, the kicking leg is in a position of maximum hip extension and is left well behind the trunk. As well, both arms are left well behind the trunk in shoulder extension and abduction, so that the kicking leg and both arms are positioned behind the trunk and almost horizontal relative to the ground. This mechanism of leaving the free limbs behind the trunk is known as inertial lag (Bahamonde & Knudson, 2003; Machar, Elliott, & Alderson, 2007), and serves to place these limbs in the optimal position to assist with the force of the kick by increasing the range of motion into the kick and placing the mover muscles on a stretch. As the kicking leg and the non-kicking arm are left behind the body at support foot placement (Figure 12), they will place the anterior trunk muscles on a stretch and facilitate the forceful contraction of these muscles during the forward motion of the leg. The kicking leg and the non-kicking arm swing forward almost in unison, while the arm is taking up some of the counterclockwise angular momentum that is being generated by the right leg. More skilled kickers produce greater angular momentum in the non-kicking arm, that helps to take up the angular momentum produced by the kicking leg (Bezodis, Trewartha, Wilson, & Irwin, 2007). The right arm swings forward with the kicking leg initially, it then moves back behind the trunk following impact with the ball. The arms can take up some of the counterclockwise angular momentum produced by the kicking leg and allow the trunk to remain square to direction of the kick.

As the kicking leg swings forward to meet the ball, both arms are swung forward (shoulder flexion) with the kicking leg (hip flexion). The arms are in a position part way between shoulder flexion and shoulder horizontal adduction as they are swung forward past the trunk. At foot contact with the ball, the left arm is parallel to the right kicking leg and is in a position of close to ninety degrees of shoulder flexion. Following ball contact the left arm crosses in front of the body to finish in a position on the right side of the body, and the right arm rotates back behind the body.

### **Follow Through**

The follow through is of critical importance in the kick, as a long follow through indicates that the leg and foot has maintained a high velocity right through impact with the ball. The kicking leg should continue to move upward through complete hip flexion and hip adduction, sideways and forward through the ball, with the knee extended and the hip flexed, and should reach at least waist height of the kicker at the completion of the hip flexion. The knee is almost fully extended and the ankle is dorsiflexed following contact. The kicking hip will continue to flex as well as adduct following contact, so that it crosses the midline and lands on the ground in front of the body and opposite the left hip. The support leg should drive upwards and forwards from the ground, so the athlete may be slightly airborne following contact.

Following the kick, the goalie will land on the kicking foot that will cross in front of the body toward the left side. The kicking foot should be pointing directly downfield or slightly to the left and the knee and hip are well flexed to absorb the forward forces generated in the run up. The trunk and shoulders should remain facing downfield, where they were positioned during the arm swing, while the pelvis and hips are facing left due to the follow through of the kicking leg.



Figure 21. At follow through the kicking leg is flexed with the knee fully extended, and the goalie is leaning away from the kicking side.



Figure 22. Following impact the hip continues to flex while the ankle moves into dorsiflexion, The trunk continues to flex forward and the left arm adducts across the body.



Figure 23 . The athlete is off-balance toward the kicking side, due to her sideways lean and the motions of the kicking leg. The kicking leg steps across the body to plant on the left side, while the non-kicking arm continues to rotate toward the right.



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