Golf: Putting Mechanics

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Putting Technique

- There is a wide variation in putting technique among skilled golfers.
- A golfer can be successful with a unique technique as long as two characteristics are in place:
  - The ball is placed opposite the left (front) foot or just behind the left foot (Some golfers prefer the ball to be in the middle of the feet, in the center of the stance)
  - The eyes are kept directly above the ball. To attain this position the trunk must be flexed close to 40 °
Feet shoulder width apart
Toes pointing forward
Eyes over ball
Knees and hips slightly flexed
The main difference between amateur and professional golfers was in set-up. This was found to be significant with amateur’s weight distribution approximately 60% Right - 40% Left. The Professional Group was much closer to 50% on both sides at set-up. Although there was no significant difference in stance width, there was a significant difference in the total amount of sway between the two groups of golfers; the amateurs had greater sway.
Putting techniques 1

- Most golfers assume a traditional stance while addressing the ball:
  - Feet shoulder width apart and toes are square (not pointing forward or backward)
  - Weight is evenly distributed between the feet
  - Trunk is leaning forward slightly
  - Slight flex in the knees and hips
  - Slight to moderate flex in the elbows so club is held just above the ground
Putting Techniques 2

- Putter is held in an overlapping grip with the left hand on top and the right hand overlapping the index and middle fingers of the left hand.
- The grip on the putter should be as light as possible.
- Head and eyes over the ball with slight trunk flexion and neck flexion.
- The head and lower body must be kept absolutely still throughout the stroke.
Putting Techniques 3

- The club and arms should swing back and through as a unit, with no additional movement from the wrists or elbows.
- The shoulder girdle and arms form a triangle that rotates as a unit but the sides remain the same length.
- The shoulder girdle moves as a unit with the club.
Arm Action in Putting

- The arms and club act as a pendulum, swinging back and then through toward the target; and the tempo of the swing should be close to that of a pendulum-the acceleration of gravity.

- The arm swing occurs from the shoulder girdle, there should be no wrist movement occurring during the stroke.

- The wrists remain locked in neutral during the swing, but there is no flexion, rotation or extension in the wrists.

- The entire shoulder girdle rotates back and forward to contact, while the wrists and elbows remain at the same angle to the club.
Pathway of Club

- Straight Back and Straight Through before and after contact; club may deviate slightly at beginning and end of stroke
- The most important aspect of putting is to bring the club straight back and straight through to the ball in a modified pendulum motion
- The club face must be square at impact, and this is best accomplished by bringing the club straight back and straight through the ball
- The ball is placed in the middle of the arc of the club and directly under the eyes
- The player must avoid any movement of the club to the inside of the arc during the contact phase
Club is drawn straight back along the ground and remains square.
Timing of the putting stroke: a professional golfer’s backswing takes about twice as long as the downswing.
Good putting stance but she has turned her head to watch the ball
Head turned toward ball
Shoulders turned toward ball
Shoulders hunched upward; Minimal trunk flexion
Putting Technique 4

- Good putters have a relatively short backswing and a relatively long follow through for the average putt
  - The short backswing will enable the golfer to get the middle of the club back to the ball more consistently; the longer the backswing the more inconsistent the ability to get the middle of the club back to the ball as the club head may twist slightly on the way back to the ball
  - A long follow through will help prevent the golfer from decelerating the club head prior to impact - one of the most common errors in putting
Deceleration of the putter

- Most players have a tendency to decelerate, or slow down the putter as it approaches the ball.
- This is often due to using too long a backswing, so that as the putter approaches the ball it is going too fast.
- The player then has to slow down the putter prior to impact, which is often accompanied by a slight rotation of the putter head, bringing it off line to the ball.
- This deceleration could also cause the club to lose too much forward speed prior to contact, so the ball does not reach the hole.
- Feet are too close together which may affect balance
- Head has turned to follow the path of the ball too soon following impact
Putting technique 5

- The length of the backswing increases with the length of the putt-as does the length of the follow through.
- It has been suggested that for each putting distance the length of the follow through was about one and one-half to two times the length of the backswing.
- As the length of the backswing and follow through increase, the speed of the putter also increases; a longer putt clearly requires a faster club head speed than a shorter putt.
Putting Technique 6

- A longer putt requires a greater clubhead speed, which can be attained by a longer lever.
- When addressing a long putt, the player could stand more upright and grip the putter closer to the top of the handle.
- This increased effective length of the putter will increase the length of the arc of the swing and increase clubhead speed.
- Player must keep the putter head under control, and not try to swing too fast or too hard on the longer putt.
- A common problem in golf is the premature acceleration of the club too early in the downswing—the clubhead must accelerate into the ball, not prior to reaching the ball.
Reading the Green

- Reading the green helps you to decide how much force to put on the putt.

- Need to consider the following:
  - Slope of the green
  - Length of the grass
  - Direction of the grain
  - Wind direction and speed
  - Wetness or dryness of the grass
  - Bumps or irregularities on the green (ball marks, spike marks, pebbles)
Spin on the ball

- The ideal putt will have symmetrical topspin following impact with the club. This topspin should be around the left right axis, with no sidespin component.
- If the ball has sidespin this suggests that the ball was hit off center.
The putter

- The putter should be constructed so that it has a high resistance to rotation to the left and right.
- Modern putters are constructed with a very large moment of inertia around the vertical axis so the club face remains square to the target even if the impact is slightly off center.
- Moment of inertia is the resistance of an object to rotation around an axis, based on mass and the distance to the axis $^2$.
- For example, the Odyssey 2 ball putter has a heavier head that is weighted on the sides to prevent club head rotation at impact.
Putting routine

- Good putters follow the same pre-shot routine for all of their putts, which usually includes:
  - Lining up the ball or ball marker with the hole from behind
  - Walking from the putt to the hole to check the slope of the green, conditions around the hole, divots, etc.
  - Placing the ball on the ball marker, usually with the logo or a line on the ball lined up with the hole
  - Picking out a divot or blade of grass to serve as a target a few feet from the ball
  - Taking a couple of practice putts from the side of the ball, just to judge the distance of the hole
Putting Routine 2

- When the putt is lined up the golfer will approach the ball from behind and place the club face squarely behind the ball.
- After the club is placed comfortably behind the ball, then the feet are positioned from the club and ball.
- Note the club must be put in place behind the ball first; then the feet are positioned a comfortable distance from the ball.
- While positioned over the ball, the golfer will take a couple of looks up at the hole, just as a reminder where the hole is and how far away it is.
- The golfer will take a few seconds to concentrate on the ball; looking directly at the logo or other marker on the ball.
Putting routine 3

- The golfer must try not to spend too much time waiting over the ball; after a couple of seconds, the golfer should start the stroke
  - The stroke starts with the backswing; following the backswing, the club swings slowly forward to meet the ball
  - The time from the beginning of the backswing to contact with the ball ranged from 0.65 s to 1.3 s depending on the golfer
  - Each good golfer shows consistency in completion times regardless of the distance of the putt
Common Putting Errors

- Missing the center of the clubface and having the ball contact the club off center - this will often cause the club to twist at impact and the ball will move off to the side following contact and miss the hole.

- Moving the head backward during the backswing and/or forward during the forward swing - this will cause the club head to move off the correct path - “you moved your head!”

- If you move your axis of rotation through the middle of your head, this will alter the low point of the pendulum and decrease contact accuracy.
Common Putting Errors 2

- Too long a backswing will also cause errors in accuracy of impact with the ball; backswing should be as short as possible.
- Errors in alignment of the ball with the hole are common- golfer must square up the club face with the line of target very carefully.
- Too much wrist movement during the stroke- the wrists must not break and must remain locked during the entire stroke.
- A common error is breakdown (flexion) of the left wrist through contact- left wrist should remain rigid.
Common Putting Errors 3

- Grip pressure control is important.
- Nervousness while putting will tighten the muscles in both your arms and hands. This increased pressure will cause you to modify your normal stroke.
- In order to become an accomplished putter, you must find your own way of dealing with pressure.
- Good Putters "see" themselves making the putt before they stroke it.
- Good Putters do everything they can to reduce their heartbeat and tension level before they putt.
Remember, keep your head still, follow through and good putting!!