

POSTURE MEANS POWER

Believe it or not, posture has a positive influence on power production. One look at Tiger on the tee should help convince you. He looks balanced and solid, with great spine angles, but, if his daily posture wasn't good, he wouldn't be able to put his body into that address position. Running fast without proper posture is impossible. Similarly, swinging a golf club without appropriate postural stability is unwise and less productive. Functional posture makes a world of difference in your swinging action and lets you impart far more force in your ball strike. For a simple demonstration, sit slumped in a chair with your head pushed forward and raise your arm. Then sit tall in your chair and repeat this arm test. Notice how much easier and farther your arm traveled? Sit slumped again and turn your head to the left, as you do during the backswing. Now turn your body to the right. Next, sit up tall, with your chin pulled in and your lower back slightly arched. Repeat these motions and then decide which posture produced a greater and more easily achieved range of motion. The spine is able to flex, extend (bend forward and backward), rotate, and bend to the side, but, when motion in one plane is used, there is less motion to be used in other planes. So if you're slumped with a head-forward posture, your middle back is flexed and, subsequently, any rotation is decreased.

Body structure and posture are individual characteristics, but an improper golf swing can cause muscle imbalances just as muscle imbalances can cause an improper golf swing. These imbalances might not be obvious until they cause a disruptive physical problem via an escape route. Virtually every postural anomaly causes some sort of adaptation in movement; some are innocuous, but some lead to diminished power as well as potential injury. Here are some common physical limitations:

- Reduced neck rotation can make it difficult to keep your eye on the ball during the swing.
- Insufficient trunk strength interferes with your ability to transfer forces from the lower body to the upper body. In addition, proper spine angle will not be maintained during the swing.
- Tight hamstrings do not allow an effective address position to be achieved.
- Reduced range of hip motion leads to compromised swing patterns and lower-back pain.
- Decreased trunk rotation limits shoulder turn, causes poor sequencing between the hips and trunk, alters the swing plane, and potentially causes back pain.
- Insufficient shoulder strength, especially in the rotator cuff, leads to decreased club-head speed, as well as poor deceleration and poor club control.

Many players think of these problems as products of the sport, so they resort to anti-inflammatory medication and other quick-fix alternatives. These responses might temporarily reduce pain, but they rarely solve the underlying problem. Most postural conditions do not occur overnight. The biggest routine physical challenge faced by amateur golfers entering their 40s and 50s has to do with the posture they've developed over the past 20 years. The body slowly adapts to poor posture, and some body parts—such as the neck, shoulder, back, and hip—may be overused to compensate for loss of motion someplace else (see Escape Routes in chapter 2). By performing a few simple exercises regularly, however, you can improve and maintain good posture and thereby improve your swinging power. The testing in chapter 1, Golf Fitness Tests, will help you decide how to focus most of your efforts in regaining better posture.

The ability to maintain your functional trunk position for each shot is an acquired skill. Teaching pros commonly refer to this position as *maintaining spine angle*. When the spine is stable, it serves as an efficient and rigid lever to transfer energy from the lower body to the upper body and on to the golf club. By increasing the stability of the spine and the muscles that support it, you can improve your game.

Bending the spine places unnecessary stress on the lower-back muscles and joints. It also reduces your ability to transfer power from your lower body to your upper body, which translates into decreased club-head speed. For example, when your upper back is bent forward or hunched over, you place extra stress on your shoulders and neck as your shoulders round forward, thereby causing the rotator cuff muscles (a group of four small muscles that protect the shoulder joint) to work in an abnormal position. This undesirable posture can produce tendinitis, muscle strain, and joint sprain. It places the muscles at a mechanical disadvantage as the joint becomes an energy leak site, absorbing force instead of passing it along into the club and ball. Of course, this position also limits your swing action to a portion of the potential movement range.

Postural muscles (the muscles that maintain spine angle) are found throughout the body and function more for endurance than for strength or power. The main role of these muscles is to hold the skeletal system and joint structures in proper alignment so that the larger and stronger muscles can produce the desired body movements with appropriate forces in tandem with maintaining good balance.

BALANCE

If you have ever stood at the loop at St. Andrews and felt the wind blow, you know the importance of balance. Balance is one of the golfer's key fitness components. The balancing interactions of the body represent a complex communication system. Balance is controlled by the central nervous system, primarily through the eyes, the inner ear, and tiny message

receptors in the joints and soft tissues (see chapter 7, Motor Memory for Power Transfer and Skill Execution, for more information). Whenever the ball lies uphill, downhill, level, or sidehill, above or below the feet, poor balance definitely can contribute to a poor shot from an imperfect lie. If you combine these factors with an inability to maintain proper trunk position throughout the swing, you increase the probability of both a poor shot and a physical injury. The goal of the postural exercise program is to improve both static and dynamic balance for the purpose of developing functional stability during the swing.

Respected Finnish physician, the late Vladimir Janda, categorized various muscles into two types of functional groups, namely those prone to tightness (those not bold on figure 5.1, pages 72 and 73) and those prone to weakness (those in bold type on figure 5.1, pages 72 and 73).

Muscles prone to tightness largely have to do with posture, whereas muscles prone to weakness are those that have other functions. Janda's work has proven extremely beneficial in determining postural imbalances that can make it difficult to maintain a desirable position during the golf swing. You want to avoid this problem, of course, so that your swinging action can be as powerful and productive as possible.

STRENGTHENING YOUR POSTURAL MUSCLES

Because the body must work as a unit during the golf swing, functional training programs should include multijoint strengthening exercises such as those that follow. For example, shoulder motion might be influenced by restrictions in the middle-back muscles and joints. Likewise, restrictions in the hip region might influence or cause problems in the lower back. This is the reason posture should be assessed for the entire body and not just the area that appears to be inhibiting the swing. Remember that perfect posture is created through a perfect combination of mobility (see chapter 3, Preround Warm-Up) and stability. Factors that contribute to mobility and stability include strength training, flexibility training, balance training, and motor learning.

Keep in mind that everyday postural positions also contribute to muscle tightness and muscle weakness. For example, a swayback position, also known as *lordosis*, is associated with tight lower-back muscles, tight hip flexors, and weak abdominals. A humped back posture, commonly referred to as *kyphosis*, is associated with weak middle-back muscles and tight chest muscles. A posture with the head and shoulders forward places undesirable stress on the neck muscles and joints as well as lower-back muscles and joints. A lateral (side to side) curvature of the spine, called *scoliosis*, results in tight muscles on the shorter side and weak muscles on the longer side of the back. In addition to causing inefficiency in general movement, these deviations may also reduce the efficiency of your swing.