Postural Screening

Many individuals have postural deviations that can predispose them to low-back pain and/or other musculoskeletal problems. It's important to understand that a postural deviation in one part of the body's kinetic chain can predispose your client to pain or dysfunction in another part of the kinetic chain. (The kinetic chain refers to the interrelationship between the body's skeletal, muscular, and neurological systems that produces movement.) The following postural assessments are simple, easy to administer, and help to develop client awareness.

**Excessive lordosis (swayback) assessment**—Have your client stand in normal alignment with shoulders and hips against a wall, feet hip-width apart, and heels 1 inch from wall. Have client relax, breathe normally, and avoid consciously pressing low back to wall. Normal lumbar curvature exists if you can slide your palm between client's lower back and the wall without forcing. If a large gap (greater than one palm depth) is found, your client may have a tendency towards lordosis and an anterior pelvic tilt, and should strengthen the abdominals and stretch the iliopsoas and erector spinae muscles. (Also observe client's bony anatomy: the anterior superior iliac spine of the ilium should not be in front of [anterior to] the pubic bone.) See Figure 5-1.

**Excessive kyphosis and forward head assessment**—Have your client march in place for a few seconds and then ask him/her to stand normally (without altering his/her natural posture) and observe him/her from the side. There is a tendency toward kyphosis if the upper back appears hunched or slouched forward. Note if the shoulders appear protracted or rounded. "Forward head” may or may not accompany this position. Forward head stance is indicated if the ears are not in line with the shoulders and/or the chin juts forward. If these tendencies exist, clients will need to strengthen scapular adductors (mid-trapezius and rhomboids) and stretch shoulder horizontal adductors (pectoralis major and anterior deltoids). See Figure 5-2.

**Hip and shoulder height discrepancies**—If a significant hip and/or shoulder height discrepancy exists, your client may have scoliosis, or lateral curvature of the spine. If this condition is accompanied by back pain or discomfort, further evaluation by a physician is needed. Also, it may be inappropriate for clients with scoliosis to participate in high-impact activities, such as running or high-impact aerobics, due to increased risk of injury. (NOTE: Such clients must be referred to a health care professional for clearance for a particular activity before that activity is recommended to them.)

To measure hip height/leg length discrepancy, have your client remove his/her shoes and stand normally with feet a comfortable hip-width apart. Place one end of tape measure on iliac crest (top of hip bone), and bring other end down outside of leg to the floor, past the lateral malleolus (outside ankle bone). Measure both sides, making sure to be consistent from right to left sides in terms of tape placement.
To measure shoulder height discrepancy, tape a large piece of paper at shoulder height on wall. Have your client stand normally against wall with shoulders pressed against paper, hips back, and heels 1 inch from wall. Place a level clipboard or notebook on right shoulder and draw a horizontal line on the paper. Repeat with left shoulder, making sure to be consistent in terms of clipboard placement. Measure distance from each horizontal line to floor with tape measure.

For both hip and shoulder height assessments, a discrepancy of 1⁄4 inch or greater between right and left sides may suggest a misalignment, or possibly scoliosis. (Misalignments may be due to many causes, including improper footwear, muscle imbalances, or habitually carrying a handbag, baby, or small child on one side.)

Finally, you will find a “Postural Analysis Guide” in Appendix C, which may be used along with the above specific postural screening techniques or alone. Many such guides exist, and all are designed to help you become familiar with your client’s musculoskeletal imbalances so that you can design an appropriate exercise program. If your client experiences pain around these imbalances, do not hesitate to refer him or her to a physician.

Step 6: Optional fitness assessment components

Optional assessment components, depending on your client, skill, equipment, and knowledge base, might include a stress management/cop ing strategy questionnaire, three-day dietary recall, lung function tests, and cholesterol testing. Additionally, power and agility assessments for athletes are available, as well as specific protocols for seniors.

Lung function can be assessed with a portable spirometer. Two values are usually obtained: forced vital capacity (FVC), the total volume of air that can be moved through the lungs in one breath from full inhalation to a maximum exhalation, and forced expiratory volume (FEV1), the percentage of the vital capacity that can be expired in 1 second (indicating the speed that the air can be moved through the lungs). In average healthy people, approximately 85% of the vital capacity can be expired in 1 second. Less than 70% FEV1 would indicate some type of airway obstruction difficulty (such as with emphysema or bronchial asthma).

Several types of cholesterol tests are available. Some facilities offer their clients relatively inexpensive, fasting blood lipid profiles performed by an outside laboratory. This is the most accurate test, as it requires the client to fast for 12 hours, and the blood is returned to the lab for LDL, HDL, triglyceride, and total cholesterol analysis. Some facilities have on-site equipment for cholesterol testing, such as Reflotron, Vision, or Kodak DT-60™. Although the initial purchase of these machines is costly and the person operating the machine needs some training, this type of basic cholesterol screening can be a valuable adjunct to other forms of fitness and wellness assessment. The test is quick, no fasting is required, immediate results are available, and the results are relatively accurate. Disadvantages include the fact that only total cholesterol is assessed, lengthy calibration and quality control procedures are essential to ensure accuracy, and some states require that only phlebotomists or other medical personnel may use finger sticks to draw blood due to the possibility of contamination from blood borne pathogens if correct procedures are not followed.
A large battery of assessments for seniors has been developed (Rikli & Jones, 2001). These fitness tests address the major components of fitness, with specific adaptations for the typical functional impairments found in older adults. Some of the suggested assessments include: the 30-second chair stand test, the 8-foot up-and-go test, the 6-minute walk test, and the chair sit-and-reach test. If you intend to work with seniors, you would be well advised to become familiar with these educational, motivational, and appropriate assessments specific to that group.

Finally, consider developing “functional” fitness tests that are specific to your individual client’s goals. Assessing physiological parameters, such as heart rate and RPE, after climbing a flight of stairs or taking a routine walk with the dog, can be a very practical way to measure change over time. When you choose activities that the client performs regularly and in which the client wants improvement, functional fitness tests can provide yet another way to validate the client’s exercise program and enhance adherence.