

Core Support and Use of the Spine

You might think that if you tighten the surface muscles at the front of the body, you are using your core. In fact, the muscles of the core lie deep in the body, and they are closer to the spine than these surface muscles. They are the transverse abdominis, the lumbar multifidi (part of the deep extensors), the pelvic floor, and the diaphragm. Good core support assists in balance and injury prevention without limiting range of motion or ease. The use of the core support muscles creates the sensations of narrowing at the waist, hollowing or drawing in the lower abdominal area, and freedom in breathing patterns. Many conditioning and training systems have developed methods to assist dancers in activating the core muscles, and no one method is the best. For more detailed information, see chapter 3 and the bibliography for this chapter.

Movements of the spine can explore full range of motion as long as good core support exists and you pay attention to elongation in all directions. For example, in arabesque, it is easy for you to arch the low back by crunching or collapsing the joint spaces. However, you can arch this area of the spine and still elongate or maintain joint space. This action not only protects the low back from injury, it is also far more aesthetically pleasing. The thoracic area of the spine is most limited in range of motion, and you should give some time in your conditioning program to work on increasing range of motion in this area. Every technique or style of dance uses the spine in different ways, not only in shape design but also in muscular effort. These can range from very bound and resisted movement to swinging and full release to gravity. You need to distinguish these various movements and their dynamic qualities, and train the body to do each in a safe and effective way.

Turnout

You create active turnout through external rotation at the hip joint. While anatomical contributions to turnout do exist down the lower leg and foot, you should not forcefully attempt to add to your turnout through these additional mechanisms, such as torquing at the knee and pronating the feet. Probably one of the most important ideas that you should embrace is that turnout is not a static position. It is an ongoing activity that is sustained throughout class and choreography. It is more important that turnout be maintained in a jump landing than held at a position at the barre. Until this dynamic patterning is habitual, you must attend to it consciously or risk injury to the lower legs. You must find indi-

vidual methods to ensure this patterning, whether through imagery, supplementary exercises, verbal cueing, or sensory feedback. You can empower personal training methods by being proactive and not relying on your teacher's cues and corrections to work on turnout.

It would be valuable for you to seek out a professional person with experience in functional assessment, and find out what your passive and active ranges of motion in turnout are. If a large discrepancy exists between the passive measurement and what you can achieve in active movement, you need to do exercises to increase active muscle use and control.

Use of Arms

Each dance technique and style approaches the use of arms differently. Even within modern and contemporary forms, a broad range of shapes and efforts exists with arm use. Perhaps the important issue for you in your training is be aware of these differences and find ways to shift from style to style as you go to different classes. In this way, you will be versatile and take responsibility for your training. Probably one of the more universal features in arm use is the aesthetic of the lengthened neck and open chest. As mentioned previously, it requires ongoing depression and retraction in the shoulder girdle to maintain neutral scapular alignment as the arms move through full range. However, the shoulder girdle must rotate upward and downward as the arms move, so thinking of locking or anchoring the scapulae is not useful and can create excess tension.

In recent years, a greater demand has been placed on the dancer for increased strength in the upper extremities. First, choreography is using more weight bearing on the arms, and many dancers do not have sufficient strength or control to do these movements safely. Second, partnering work is becoming increasingly complex, and female dancers are expected to lift other dancers as well as to be lifted. If you are currently in a dance company or school in which these tasks are expected of you, it would be advantageous to do strength training for the arms and upper body as part of your personal program.

Use of Lower Legs and Feet

The lower legs and feet probably have the highest potential for injury in elevation work (jumping). Jumping technique requires strength and power (strength applied at speed) in all of the extrinsic and intrinsic muscles of the feet and ankles. In addition,

it requires excellent motor control, which refers to the messages from brain that organize the movement patterns. Further, being a strong jumper in one technique does not mean that you are necessarily prepared for jumping in a different technique. For example, the advanced ballet dancer may not be able to safely achieve jumps in parallel position given in a modern or hip-hop dance class.

Regardless of the style of jumps, landings should always be controlled and soft to absorb the force of the landing. When you push off for a jump, the muscles creating the movement shorten; this action is called a **concentric contraction**. When you land, the muscles need to elongate even though they continue working; this action is called the **eccentric contraction**. The eccentric contraction is the most

difficult phase to train, and it is also what protects the lower legs from injury.

A dancer may have **hyperextended knees**, in which the back of the knee is bowed due to long ligaments, and also be able to pronate and evert (“wing”) the foot. These movements are potentially problematic in weight bearing, because they put undue stress on the ligaments and structures of the joints. However, they can be safely used in gesture (nonweight bearing) if a choreographer requests it. If you are aligning your body this way, you must simply be aware that you return to neutral alignment of the joints when returning to weight bearing.

While these discussions cover only the most general areas of technical training and dancer wellness, the information can assist you in becoming aware of their issues and stimulate further thoughts and research. In this way, you can begin to develop personal strategies to enhance your technique. You can set progressive goals for future improvements, becoming your own trainer and teacher in the process.



A beautiful example of arabesque en pointe with elegant alignment of the knees and feet.

Karen Kain in *Romeo and Juliet* (ca. 1982). Photo by Andrew Oxenham. Courtesy of the National Ballet of Canada Archives.