

DANCERS' HEALTH CORNER

Pointing you in the right direction

BY KATHERINE EWALT

Note: The "Dancers' Health Corner" is a regular column for DSD written by Katherine Ewalt from Performing Arts and Athletic Restorative Training Specialists (PAARTS), San Diego. The column presents information and/or advice about dance-related injury and injury prevention. The information is provided as a resource and should not be used to self diagnose or treat. Dancers who experience ongoing pain should seek the advice of a physician or clinician to avoid aggravating current symptoms or potentially causing other more serious injury. Due to legal limitations, no individual diagnosis or treatment plans will be provided through this forum. If you have questions, e-mail them to info@PAARTSsandiego.com.

Q: I've worked professionally for 30 years as a dancer, director/choreographer and commercial producer. My dance background is primarily in tap and jazz. Three years ago I strained my neck and shoulders doing yoga. I now have a chronic injury that limits my range of motion and prevents me from doing some of the things I love as well as occasional flare ups. What can I do? —*Stiff but Still Dancing*

A: The neck plays an essential role in the aesthetics of dance presentation, and therefore deserves special consideration. From the subtle inclinations seen in ballet to the rapid isolations in jazz, dance movements of the head and neck convey grace, power and intent. Cervical spine (neck) injuries in dancers are not as common as injuries to other parts of the body. However, when cervical spine injuries do occur they can be quite menacing to the dancer in daily life and dance activity. Several factors may be related to the presence of pain and restricted range of motion in the cervical spine, including posture, muscular strain, herniated disc or degenerative disc/joint disease, facet impingement, or facet sprain.

Commonly in dancers, neck pain is related to maladaptive alignment, or more plainly, poor posture. A dancer's poor posture may have developed through years of improper technique or in response to an injury as the body's way to avoid further pain and discomfort. Variations in alignment that influence the positioning of the cervical spine include increased lumbar lordosis (curvature of the low back), increased thoracic kyphosis (rounding forward/hunching of the upper-back), forward position of the head, and/or a straightening of the cervical spine's natural curvature. These variations alter the center of gravity of the head placing it forward of the dancer's normal center of gravity, which causes the muscles of the cervical spine to work harder to support the weight of the 15-20 pound head.

This scenario typically results in a decrease in range of motion, predominantly in

neck extension (leaning your head back) and rotation of the head/neck to the left and right. It also makes the dancer more susceptible to muscular strains of the cervical spine, in particular dancers who perform quick head movements such as those seen in jazz, modern and hip-hop dance styles. Additionally, these forms of dance may require not only sudden head movements but possibly even for the dancer to support his or her body weight on the head or cervical spine, further exposing this area to injury.

Tightness in the muscles or joints at the base of the skull cause extension of the head and upper cervical spine and a flattening of the lower cervical and upper thoracic curvatures in order to keep the head level. However, this positioning can lead to other problems. The vertebrae of the spine are like puzzle pieces; there is a specific way in which they are to match with one another. Variations in one part of the spine will result in adjustments in other parts to keep the body upright and one's sight line level. Similarly, the position of the spine affects the mechanics of the upper extremity.

In dancers, abnormal posture usually involves a forward head position, flattened lower cervical and upper thoracic spine (particularly in ballet dancers), and forwardly rounded shoulders. Of note, there is only one bony connection of each upper extremity to the trunk of the body. The upper extremities are primarily suspended by ligaments and muscles that connect to and from the head, cervical/thoracic spine, clavicle (collar bone), ribs, upper arm, and scapulae (shoulder blades). Poor posture involving any of these areas puts the musculature of the head, neck and upper extremity at a mechanical disadvantage. As a result, some postural muscles may become tight while others become weak resulting in pain, discomfort and a loss of motion. This sort of habitual posture can lead to other, more serious disorders including cervical disc herniation.

For dancers, the most common traumatic injury in the cervical spine is a muscular strain. This injury is usually the result of excessive and repeated movements of the head/neck beyond one's normal range of motion. Dancers who have injured the musculature of the cervical spine complain of pain along the side of the neck that may extend down toward the shoulder. If not appropriately managed in the early stages, pain may continue and progress to other areas such as between the shoulder blades and possibly around the base of the neck to the upper chest. More severe cases may involve the adjacent spinal nerve root. Dancers may experience referred pain or nerve root pain that radiates down the same-side arm with or without numbness, tingling or weakness in that upper extremity. Additionally, the dancer may experience headaches.

The herniated intervertebral disc is more serious than a muscular strain, but presents with similar symptoms. This injury may occur during a sudden movement or

as a result of excess strain placed on an already degenerating disc. Degeneration is a natural process of aging that can be hastened by poor posture and overuse. The loss of normal joint motion that occurs with poor posture results in a decrease of body fluids and blood supply to the affected area. Consequently, nutrition to these tissues is decreased leading to early joint/disc degeneration. Similarly, excessive joint motion can also lead to joint/disc degeneration secondary to increased wear and tear. It is important, particularly for someone who has had a long dance career, especially in genres that require percussive head movements, to rule out a herniated disc or degenerative joint/disc disease to the cervical spine.

Cervical spine facet impingement is another injury that results in neck pain and limited range of motion. This joint disorder is usually the result of a sudden, unguarded movement in neck extension, side-bending, and/or rotation with little or no trauma. In this disorder, the soft tissues that line the joint are pinched between the bony joint surfaces. A dancer with this injury may complain of localized neck pain with movement, limited range of motion, and pain that radiates into the upper back or arm. Generally, there are no complaints of pain when the dancer is at rest. There is also the possibility of the dancer sustaining a facet joint sprain secondary to moderate or severe trauma. These two disorders are quite different but, again, may present with similar symptoms.

Injuries to the cervical spine can be quite complex and threatening to the dancer. Caution should be used in attempts to self correct one's postural deficits; often these efforts involve the use of conscious control over movement patterns, i.e., tucking the pelvis to decrease arching of the low back, lifting the arches of the feet to limit pronation or tucking the chin to reduce a forward head position. Although these are nice attempts, once movement begins in class/rehearsal, the old patterns tend to reappear contributing to the cycle of pain and dysfunction.

In general, and until proper diagnosis is made, it is suggested that the dancer avoid pain-producing movements and work in a comfortable range of motion. Gentle neck stretching can be performed as well as slowly rotating the head from side to side. The latter should be performed while

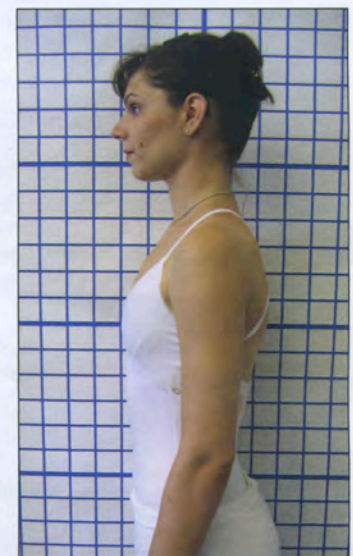
lying down so the head is supported. The application of ice may also help to relieve symptoms. A slow return to aggravating activities, with a gradual increase in repetitions, is suggested.

It is important to have a proper diagnosis to appropriately resolve the injury. Following diagnosis, a clinician may perform a variety of manual maneuvers and instruct the dancer in postural exercises to assist in relieving pain and restoring motion. Dancers may also consider working with a movement analyst experienced in dance, anatomy, biomechanics and neuromuscular reeducation who can facilitate the retraining of functional movement patterns. **DSD**

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Poor posture



Good posture

PICTURES:

Poor posture: Note forward position of the head and neck, flattened cervical spine curvature, forwardly rounded shoulders, rounding forward of the upper back, increased arching of the lower back.

Good posture: Note proper head alignment with the ear lining up at the middle of the shoulder and hip, normal cervical spine curvature, neutral shoulder alignment, improved upper and lower back curvature.

Model: Christine Owen, San Diego Ballet



Hip Flexor Stretch



Piriformis Stretch

correction

In the September/October 2007 issue of *DSD*, two of the stretches were reversed. Above are the correct names for the correct stretches. Model for stretches: Claire Bletz

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