

Diagram 1

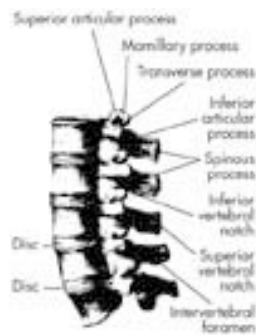


Diagram 2

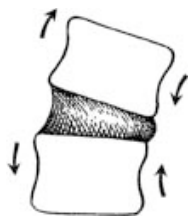
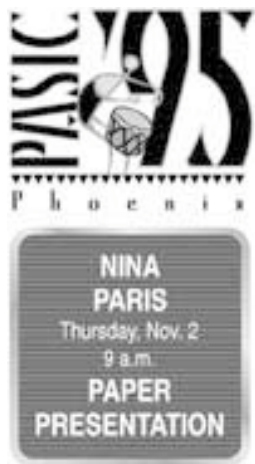


Diagram 3



Performing Arts Medicine Basic Concepts in Preventing Injury

RECENT MEDICAL-SCIENCE RESEARCH HAS CHANGED our attitudes and approaches to life. Nutrition and exercise have been affected by this research, which has elicited a great deal of interest from those who desire a healthier, longer and more productive life.

However, one concept remains unchanged: Mother nature had a preconceived notion about how we should use our bodies. It is not unusual to find an article in the newspaper about Carpal Tunnel Syndrome, linking this nerve-entrapment problem with misuse and overuse of the hand and wrist. It is also becoming apparent that Mom was right to nag us to sit up straight at the dinner table. Had we listened to her then, we'd probably have less neck and low-back pain today. We can't change the past, but we can try to change what lies ahead.

From the time you start to play a musical instrument, you may assume unnatural body positions—sometimes because of the design of the instrument, sometimes from problems such as playing in a cramped space in an orchestra pit. Other times, problems occur because of our unyielding drive to perfect our performance. Unfortunately, this scenario too often results in chronic, painful and unrelenting medical problems that can end a career. To minimize such injuries, we must learn how our body naturally works.

Our spine can be considered the framework for the body. It is composed of thirty-three vertebrae that rest on top of each other, separated by thin jelly-like discs (see Diagram 1). The spine has several natural curves (see Diagram 2) that help provide the shock-absorber effect needed when we walk or run.

Pushing these curves out of their natural balance will affect the relationship of the vertebrae to each other and to their discs (see Diagram 3). The areas of the spine that are most mobile (i.e., easier to move out of the natural configuration) are the most vulnerable to injury because they are also the least stable. These are the areas that most people complain about: the neck or cervical area and the low back or lumbar area.

When the natural curves of the spine are balanced, we have good physiological posture. Moving and working while preserving this position is the foundation of body mechanics. Deviations from proper posture eventually lead to chronic pain and disability, as do weak muscles, poor posture, general poor physical condition and inadequate sleep.

Body mechanics is a way of moving the body within its natural posture to prevent injury or protect against re-injury. If we move in an unnatural way for long periods of time, pain often results. This pain comes from overstretched or injured muscles

and, even more likely, the soft tissues and ligaments underlying and surrounding those muscles.

Most of us experience pain when we misuse our natural posture. For example, when one leans over a drumset for long periods of time, very rounded shoulders will likely result. From prolonged sitting with our necks bent down, the now-rounded upper spine will get stiff and the balance of the shoulder blades and nearby muscles (which are now pulled forward) will be altered, which in turn makes it more difficult and painful to move our arms.

Consider the position one has to adopt to play a marimba that is a little too low, or the position of a tall vibraphone player. Nature is not perfect, and in some positions our tendons are subjected to a great deal of wear and tear. To make matters worse, musicians will practice and perform in an awkward posture for hours at a time.

For most musicians, medical problems are a result of years of practicing and performing in bad postures that create or enhance problems caused by poor technique and body mechanics. These bad habits are not limited to performance and practice time; consider the time spent lifting and moving one's equipment. Many daily activities can contribute to overuse or misuse of the natural body mechanics and lead to pain.

Stress from a hectic schedule can express itself as muscle tension. Significant pain will cause the body to adopt pain-relieving or protective postures that most likely are not within the definition of proper positioning. And so the cycle continues.

What can be done? First, check with your doctor regarding your ability to exercise. Second, maintain good balance by strengthening your abdominal muscles and improving your overall physical condition. Adequate sleep is essential, as it provides time to rest weary, overused muscles, thereby guarding against injury that comes with fatigue. You can also help yourself by learning good body mechanics. It can be as simple as recognizing good posture and then observing your own posture. If the natural curves aren't there, they need to be restored.

Practice in front of a mirror to observe your body position. If you don't like what you see or feel any discomfort, rearrange your instrument(s), seat height or your distance from your instrument(s). Observation is critical to one's good health and ability to perform for a lifetime!—**Nina Paris**

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