Athletic injuries are costly not only in terms of money and time—they also affect individual and team performance. Even more important, they are often very painful, and none of us want to see our athletes in unnecessary pain. This is especially true if a more appropriate training program could have prevented the injury.

In the athletic environment, prevention of musculotendinous injuries is best achieved by ensuring that the athlete has achieved appropriate levels of strength, cardiovascular (CV) conditioning, and flexibility. This should enable the musculoskeletal system to perform the required movement with the optimal development of force, through the optimal range of motion (ROM), for the duration of the competition. Training programs that fail to prepare the athlete in all three of these areas might predispose the athlete to injury.

This article focuses on the development of an effective flexibility program and attempts to give the experienced athletic trainer or therapist additional perspective in the development of a sport- and athlete-specific flexibility program. Even the best flexibility program will be ineffective in preventing injuries if it is not provided in concert with an appropriate strength- and CV-conditioning program. Although it is not possible to sufficiently cover such programs here, a general outline of considerations is given in Table 1.

**Flexibility**

Flexibility is an integral part of any training program and is essential in the pursuit of optimum...
performance, as well as in injury prevention and rehabilitation. Adequate flexibility allows joints to move through the necessary ranges of motion and should allow for a reasonable amount of error in movement, especially in contact sports, in which the error might be caused by another player. Lack of flexibility, on the other hand, can cause compensation at other joints or operation of the target joints at or near their end ranges, either of which can result in injury.

**Achieving Optimal Flexibility**

Unfortunately, there is not yet any graph, table, or computer program that can determine the necessary ranges of motion throughout which each athlete must be able to move in order to be able to perform safely and effectively. Each sport has its own specific demands; each athlete has his or her own individual physiological profile. These must be considered in order to determine appropriate flexibility needs. Responsible clinicians should rely on the combined knowledge and input of a number of skilled professionals from various related fields.

Normal ranges of motion can be found in sources such as the American Academy of Orthopedic Surgeons (1965) and Kendall and McCreary (1983). These authors have listed normal ranges of motion for all the major joints. Sources such as these are excellent places to start when considering normal function but will fall short of describing the needs for various athletic endeavors.

The skilled athletic trainer or therapist should analyze a sport’s necessary movement demands and then carefully compare them with the athlete’s available ROM. This will allow the design of the appropriate flexibility protocol for each individual based on his or her position, physical attributes, and present level of function. This might be in stark contrast to the typically applied approach of using a generic list of stretches for everyone on a particular team. A baseline list of stretches that will benefit the entire team should be prepared by a knowledgeable professional who has thoughtfully analyzed the sport’s demands. From this framework, specific modifications can be made based on the assessment of individual athletes. Remember, it is possible for an athlete to have too much flexibility (in the muscle–tendon unit) or to have hypermobility in certain joints. In either case, the clinician would be wise to modify or eliminate the flexibility exercises, which could further the hypermobility or hyperflexibility.

**Two Types of Flexibility Training**

The clinician should be aware that there are two distinct types of flexibility training. Type I is flexibility the athlete already has; it just needs to be “awakened.” Training Type I flexibility does not necessarily cause athletes to gain ROM, it just allows them to realize their potential, so it will be referred to here as potential flexibility. Potential flexibility is important when preparing athletes for activity, and it is also important to maintain their flexibility “potential” during the event.

On the other hand, in Type II, or progressive, flexibility, the focus is on permanently and progressively gaining flexibility and subsequent ROM over the course of weeks, months, or years. This type of flexibility is particularly important for athletes who do not have the necessary ROM to safely and effectively perform the movements demanded by their sport.

**Potential Flexibility**

Pursuit of potential flexibility is valuable to all athletes, regardless of their absolute level of flexibility. This is the flexibility that we are concerned with during the