

MPI's Sports Injuries Modules: An Answer to Your Many Requests!

Over the last few years, MPI has been asked to provide a sports-injury course that ties in with the pre-existing MPI postgraduate courses and the back force transmission system. MPI is proud to announce that this task has been now been completed and that the first module will be taught in Chicago during September 1997. Topics will include: the biomechanics of each sport; the mechanisms of injury; examination; diagnosis; formulation and application of treatment plans (i.e., modalities, taping, specific adjustments, rehabilitation of the region in question so that non-compensatory changes take place, etc.); and when to refer to other disciplines.

The first module will be running. As running is a major part of most sporting events, considerable time will be spent on the biomechanics, muscular control (concentric and eccentric loading), and neurology of gait. Both walking gait and running gait will be discussed with a special emphasis on the motion of every articular structure that has biomechanical significance. The examination of the foot, talocrural joint, knee joint and the pelvic mechanism while relating it to the back force transmission system and its slings of dynamic influence will be a major focus of the first class. The muscles will be dealt with from the point of view of "when do they really fire" and what is the duration of their activity.

Each class will have a guest speaker who is a recognized expert in the sport being discussed. This expert will take the class through all aspects of (in this case) running, from sprint to the longer distances. This will be done in an open forum concept where the doctor will be able to participate in the demonstration and lecture. Participants in this seminar will be encouraged to bring exercise clothing so that they may actively become a part of the experience.

Along with the instructor, the expert will discuss the most common injuries and bring forth many small training secrets and things to watch for in an athlete's training routine that are predisposing factors of dysfunction and eventual injury states later, in other words, prevention. The terminology peculiar to each sport will be presented so that the doctor will be able to take a proper case history and to better understand the mechanism of injury. The use of videos will enhance the attendee's ability to return to the office and put into practice these exciting techniques and concepts.

The first module will be broken into the following major groups:

1. the athlete's foot and lower limb, structure and function, and the back force transmission system;
2. the biomechanics and dynamics of speed;
3. sprinting stride actions, analysis and evaluation;
4. hamstring parity;
5. various injury states, their presentation, treatment, support, and rehabilitation;
6. spinal, pelvic and upper limb compensations and biomechanical considerations;
7. orthotics: types, uses, needs, and legal implications of their use.

Upon completion of this module the doctor will have a comprehensive understanding of running and be in a position to treat runners more efficiently.

The type of clinical excellence that will come out of this course can be perhaps best described by the following example: a 26-year-old 400 and 800 meter runner with a five year history of recurring low back pains and subsequent medial left knee and talocalcaneonavicular joint pains. In addition, the subject had two pairs of inserts for her shoes, both of which were entirely different in their purpose.

The patient was attending a university on a full track scholarship and was theoretically being treated by the right people: a sports injury MD, physiotherapists, a kinesiologist, a massage therapist, and two DCs, but with little or no success. There were no positive orthopedic tests and muscle flexibility was greater than normal.

During the off-season, when the patient was able to rest from training, she would become symptom free within a few weeks with no care. Runners need to be examined with the doctor's eyes while running or asked to provide a recent training video; after all, this is 1997 and most runners have these available. Upon review of the video it was noticed that the arms would drop to the side and project laterally, the right one much lower than the left, during running of the corners, and then return to a normal symmetrical pumping action on the straightaway.

What does this mean? How could this be the cause of the patient's low back, right knee and foot pain? If we first consider the function of the latissimus dorsi during running actions with respect to its impact on the contralateral gluteus maximus and the remainder of the oblique dorsal muscle-fascia-tendon sling, then the next step of understanding the failure of force closure of the ilio-sacral joint to occur is easy. Clearly it can be seen that this results in a sacroiliac joint dysfunction from heel strike to late midstance phase of running gait and a resultant inflammatory state leading to nociceptive afferent input to the dorsal horn of the spinal cord. This, of course, results in sympathetic hyperactivity and reflex muscle spasm and pain which (in and of itself) is a self-perpetuating mechanism. The weight transfer during this phase of running gait is from right to left, resulting in an increase loading of the ipsilateral longitudinal muscle-tendon-fascia sling.

This asymmetrical loading, iliosacral and sacroiliac joint dysfunction has a direct impact on the torsion of the femur, which leads to compensatory tibial torsion and popliteal spasm. The loss of tibial torsion at heel strike through late midstance phase of gait results in an inability of the fibula to drop inferior. This inability to drop causes a loss of biceps femoris and sacrotuberous ligament loading, and a subsequent compensatory unchecked movement of the sacrum into nutation which results in a multifidus spasm on that side and low back pain once again.

The treatment was directed at the cause, which in this case was the aberrant asymmetrical arm motions in a counterclockwise oblique direction during the running of corners. Once this biomechanical fault was corrected, the appropriate adjustments were made, and neurological function was re-established through the use of balance beams, balls and cross crawling exercises. The patient now is running in a pain-free state and has resumed her university education.

This is the type of sports chiropractic that the doctor will be able to do upon completion of the MPI Sports Injury modules.

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