Modified Running Technique Reduced Injuries

BY HEIDI SPLETE

RIO GRANDE, P.R. — Injury rates among recreational runners were significantly reduced after they adopted a running technique called ChiRunning, according to results of a survey of 2,500 runners.

Previous research has suggested that injuries among runners increase with age, but such injuries may be prevented with some simple modifications to running technique that can be self-taught from a book, Dr. Mark Cucuzzella of West Virginia University, Morgantown, said in an interview.

ChiRunning, described in a book of the same name by Danny Dreyer (New York: Fireside, 2004), involves leaning forward while running so that the midfoot, rather than the heel, strikes the ground.

Dr. Cucuzzella and his colleagues, including Mr. Dreyer, conducted an online survey of adult runners who had bought the ChiRunning book or had subscribed to the ChiRunning e-mail newsletter. The survey, conducted online over a 2-month period in the fall of 2007, is the first study to evaluate the impact of changing running technique on injury rates in moderate and recreational runners, said Dr. Cucuzzella, a family physician and experienced runner who has dealt with his share of injuries.

A total of 71% of the runners said that they were able to teach themselves the technique from the book; others learned it from clinics or other resources. Most (80%) of the respondents indicated that they ran fewer then 30 miles per week, and more than 70% were older than 40 years. Approximately 55% of the respondents were men, 45% were women, and about 50% overall had been injured before trying the technique.

More than 90% of the respondents said that they were able to change their running mechanics, and 60% of these reported improvements within a month. Just over half of the respondents said that they had tried ChiRunning to recover from an injury, and 88% of these runners believed that the technique "probably" or "definitely" aided their recovery.

Some individuals reported that they were able to avoid surgery, said Dr. Cucuzzella who presented the results in a poster at the annual meeting of the North American Primary Care Research Group.

Overall, injury rates were significantly lower in the 6 months after learning the ChiRunning technique, compared with baseline rates. The number of respondents who reported missing more than 20 days of running because of injury dropped from 25% to 6%, and the number who reported missing 10-20 days of running because of injury dropped from 15% to 5%. More than 90% of the respondents said they thought that the ChiRunning technique had played a role in preventing injuries, and more than 90% of the respondents said that they would recommend ChiRunning to others.

The clinical implications are that physicians can introduce patients, especially those with nagging sports injuries, to an intervention that has been shown to reduce injury rates and keep people active.

Dr. Cucuzzella plans to conduct a prospective study to follow and compare injury rates in runners who have used the ChiRunning technique with control patients who have not.

Dr. Cucuzzella had no financial conflicts to disclose. ■

LORI CHEUNG

When ChiRunning (left), the ankles, pelvis, and shoulders are in alignment, which is reported to increase efficiency and reduce the risk of injury.

Watch related video at www.youtube.com/FamilyPracticeNews.

Mild Septal Deformation May Be Safe in Athletes With LVH

BY HEIDI SPLETE

Endurance athletes with left ventricular hypertrophy had deformation values within normal limits, based on echocardiographic findings from 182 adults who participated in a study.

Because hypertrophic cardiomyopathy (HCM) is a leading cause of sudden cardiac death in athletes, it's important to distinguish between HCM and left ventricular hypertrophy (LVH), the changes in heart cavity size and wall thickness that often occur in endurance athletes, according to Dr. Arco J. Teske of the University Medical Center in Utrecht, the Netherlands.

Dr. Teske and colleagues compared imaging data from 120 athletes and 62 nonathletic controls aged 18-40 years who had a normal electrocardiogram and no history of cardiovascular disease, diabetes, or hypertension. The study population included 57 amateur athletes who trained at least 9 hours but not more than 18 hours each week, 63 Olympic-level athletes who trained more than 18 hours each week, and 62 healthy controls who exercised less than 3 hours each week. Overall, 62% of the athletes and 58% of the controls were men.

The athletes participated in endurance sports including rowing, triathlons, cycling, and running. The study did not include individuals with HCM or hypertension-induced LVH (doi:10.1136/bjsm.2008.054346).

The researchers performed a standard echocardiographic exam and measured left ventricular dimensions, and they identified LVH in 33 athletes (28%). LVH was defined as an LV mass greater than 132 g/m^2 for men and greater than 109 g/m^2 for women. The average left ventricular mass was significantly higher in both amateur and elite athlete groups (103 g/m^2 and 136 g/m^2, respectively) than in controls (88 g/m^2), but diastolic measurements were similar among all groups.

Tissue Doppler imaging showed no differences in strain or strain-rate values among athletes with LVH, compared with controls and athletes who did not have LVH. In a regional deformation analysis, a barely significant correlation appeared between anteroseptal wall thickness and both strain and strain-rate in athletes with LVH, which suggested a slight reduction in septal longitudinal function when the septal wall was thicker. But the correlations remained similar to those of the entire study group, and no significant correlations appeared between posterior wall thickness and regional deformation values.

Previous studies have identified cutoff values of –10.6% for peak systolic strain and a septal/posterior ratio greater than 1.3 as signs of HCM, and none of the patients in this study met those criteria, despite the gradual reduction associated with the increased wall thickness, the researchers noted.

These findings indicate that a moderate reduction in regional septal deformation shouldn't be considered problematic in an endurance athlete with "echocardiographic LVH of unknown origin," they concluded.

Dr. Teske and his colleagues had no financial conflicts to report. ■

Ankle Replacement May Not Preclude Sports Participation

BY MICHELE G. SULLIVAN

Most patients who undergo a total ankle arthroplasty are able to resume their sports activities at presurgical levels, an observational study has found.

Of the 101 patients surveyed, 62% were active in sports before surgery and 66% after surgery; these patients participated in the same number of recreational activities at the same or at a slightly increased activity level, Dr. Florian D. Naal and his colleagues reported in the American Journal of Sports Medicine.

Dr. Naal of the Schulthess Clinic, Zurich, and his coauthors attributed the favorable outcomes to the new generation of three-component, porous-coated, mobile-bearing implants, which have renewed interest in this procedure, especially among younger patients.

The authors surveyed 101 of their patients who underwent total ankle arthroplasty from 2002 to 2005. The patients' mean age at surgery was 59 years (range, 24-87 years). The primary diagnoses were posttraumatic ankle osteoarthritis (46%), primary ankle osteoarthritis (35%), and inflammatory ankle arthritis (19%). The mean follow-up was 44 months.

Ten patients stopped their activities after surgery, while 14 who were inactive beforehand took up a sport afterward. Patients who kept playing sports engaged in the same number of sports before and after surgery (mean of three), and actually devoted somewhat more time after surgery (mean 4.7 hours vs. 4 hours). The 20% difference was not statistically significant, however (Am. J. Sports Med. 2009;37:95-102).

According to the University of California, Los Angeles, activity scale, activity levels increased significantly after surgery, rising from a score of 4 to 6. Patients who had inflammatory osteoarthritis were the least active, while those with primary ankle osteoarthritis were the most active, although this difference was not significant.

When surveyed about surgical satisfaction on a visual analog scale of 1-10, patients rated their surgery as satisfactory, with a mean score of 8. The mean pain level during sports was 3; 63% of the group was satisfied with the level of postsurgical sports activity.

The American Orthopedic Foot and Ankle Score improved significantly after surgery, from a mean of 45 to a mean of 84. Tibial radiolucencies were observed in 35% of patents, and radiolucencies around the talar component in 8%.

The authors declared they had no potential conflicts of interest relevant to the study. ■

Why? Your foot strike significantly affects your speed, energy consumption, and even risk of injury every time you lace up those sneakers, so it stands to reason that athletes would be on the lookout for the optimal version of impact. With so many conflicting theories, it can be tough to determine which foot strike is best. Scientists have demonstrated how barefoot running, when done properly, can considerably decrease the risk of injury as it produces significant changes to foot strike patterns, regardless of the speed of the runner. Share: FULL STORY.Â The use of standard modern footwear appears to favour the opposite technique; initiating contact with the ground at the heel area with a rearfoot strike, which produces significant impact peaks that negatively affect the runner's health and athletic performance. There is currently a great deal of interest in the barefoot running trend, which is supported by a growing number of runners and researchers who are attempting to gain a better understanding of the advantages and disadvantages of this type of locomotion. â€œRunning has become a mainstream sport in recent years. Until recently, a runner was an athlete who learned to run like one learned to play tennis; he was a specialist in his sport. Things have really changed, which is good because the widespread practice of jogging has contributed in a big way to the democratization of physical activity for all. But there is a catch!Â But then again, how do you reduce the risk of getting injured? Of course, there is no simple answer. --- Our trail running shoes for WOMEN | for MEN --- Our running shoes for WOMEN | for MEN. â€œProtect yourselfâ€ by doing muscle-strengthening exercises.Â Other causes of injury. Running technique. There is no universal technique. Every running fiend shares the same fear: getting sidelined with an injuryâ€”for months. A new University of Wisconsin study review shows there may be an easy way to avoid having to unlace your sneaks: shortening your stride.Â He adds that even subtle changes in your normal gait can predispose you to injury if you haven't strengthened the muscles being recruited in order to shorten your stride. That said, if you're chronically injured anywayâ€”and physical therapy hasn't relieved your aches and painsâ€”you may want to try tinkering with the biomechanics of how you run. Running Injuries - Ten top tips on how to prevent injuries while training for your next running event in this in-depth article on how best to train.Â Running injuries are injuries that occur to muscles, ligaments, tendons, bones or joints as a direct result of the repetitive motion of running. They are generally known as overuse or overload injuries and can occur for a variety of reasons.Â Exercise variation reduces the risk of running injuries. Runners who only run are more likely to pick up an overuse injury than those who mix running with other sports like cycling, cross-trainer, rowing or gym circuit training classes like HIIT, Boxercise or CrossFit. Pure runners are also renowned for ignoring the early signs of overuse injuries in the hope they will â€œrun it offâ€.