should include both physical changes and subjective measures to detect these changes.

6. Finally, research methodology brings together some of the errors and biases that occur when undertaking clinical trials on low back pain subjects, who are not an heterogeneous population. These errors and biases include: lack of control groups; relevant outcomes; inadequate follow-ups; the same treatment applied to different conditions; a small study population; and poor standardisation. Furthermore, studies which achieve high degrees of standardisation often fail to demonstrate clinical effectiveness. They can also be criticised for failing to investigate methods which reflect true physiotherapy practice. Until adequate trials are undertaken which accurately evaluate the effect of most available treatments, patients will not be receiving the optimal standard of care.

The author concludes by stating that a long history of usage of a particular treatment is no guarantee of its therapeutic value; current up-to-date trials are needed to justify their inclusion in current physiotherapy practice.

A. LINGWOOD

PERIPHERAL PATHOLOGY

Manipulation does not alter the position of the sacroiliac joint. A roentgen stereophotogrammetric analysis. Tullberg T, Blomberg S, Branth B, Johnsson R. Spine 1998: 23; 1124–1129.

Sacroiliac joint dysfunction is controversial with manipulation being the traditional form of therapy, however the validity of different sacroiliac joint tests is unknown, with many manual therapists claiming that their good clinical results are a consequence of a reduction of subluxation. The aim of this study was therefore to investigate whether manipulation influences the relationship between the ilium and the sacrum, and whether positional tests for the sacroiliac joint are valid. Ten patients with symptoms indicating unilateral sacroiliac joint dysfunction were recruited and 12 sacroiliac joint tests conducted on each subject, with the outcome of most tests having to be positive before manipulation and normalized after manipulation. To determine whether there was a reduction in subluxation roentgen stereophotogrammetric analysis was performed with the patient in the standing position, both before and after treatment. The authors observed that manipulation did not alter the position of the sacrum in relation to the ilium in any of the patients, however positional test results changed from positive before manipulation to normal after. The authors conclude that manipulation of the sacroiliac joint normalized different types of clinical test results but was not accompanied by altered position of the sacroiliac joint; therefore the positional test results were not valid. They further conclude that the current results do not prove or disprove the possible beneficial clinical effects achieved by manipulation of the sacroiliac joint. Further studies of the effects of manipulation are suggested and should focus on the soft tissue response rather than on the possibility of reducing subluxation.

R.W. SOAMES

Clinical reasoning in the evaluation and management of undiagnosed chronic hip pain in a young adult. Zimny NJ. Physical Therapy 1998: 78; 62–73.

This is a case report in which the author describes the clinical reasoning employed in managing chronic left hip pain in a 21-year-old recreationally active woman. The individual presented with a history of possible congenital hip dysplasia (CHD) and known recurrent lateral (external) patellar subluxations on the left side. Hip pain was experienced when doing step aerobics, playing soccer, walking and sitting. The initial assessment involved determining hip range of motion (ROM), muscle force and joint stability: abnormal movement patterns were also observed during both gait and step aerobics. Intervention and treatment was based on the hypothesis that periarticular stiffness and muscle weakness from an earlier trauma compounded the joint instability resulting from CHD. Following intervention there was an improvement in hip ROM and muscle force, and a reduction in hip pain, which resulted in an increased participation in recreational activities and movement patterns during step aerobics. The author stresses that an eclectic approach to the analysis of the problem was used, combining data unique to the patient with knowledge of CHD and the concepts proposed by Cyriax, Maitland, Sahrmann and others. The clinical reasoning used to establish a basis for treatment, as well as its limitations, is also discussed.

R.W. SOAMES

The effects of foot position and load on tibial nerve tension. Daniels TR, Lau JT, Hearn TC. Foot & Ankle International 1998: 19; 73–78.

Surgical decompression of tarsal tunnel syndrome of unknown etiology is often not successful; a possible reason being that although it addresses the soft tissue constraints the role of osseous support is ignored. It has been suggested that a pes planus deformity may be an unrecognised cause of tarsal tunnel syndrome due to increased tibial nerve tension. To address this question the authors conducted an in vitro study on nine cadaveric feet in order to determine the influence of foot position and load on tibial nerve tension. Tibial nerve tension was measured with the foot in dorsiflexion, eversion and combined dorsiflexion-eversion, and under cyclical loading with increasing internal rotation in 5 degrees increments from 0 degrees to 20 degrees. After the creation of a pes planus deformity nerve tension was again determined under the same conditions. Eversion, dorsiflexion and combined dorsiflexion-eversion significantly increased tibial nerve tension in both the stable and unstable foot: there was also a significant increase in tension in the unstable foot compared with the stable foot during eversion, dorsiflexion and combined dorsiflexion-eversion. In the stable foot tibial nerve tension was significantly increased during axial loading when internally rotated 10 degrees, 15 degrees and 20 degrees compared with 0 degrees rotation; however, in the unstable foot there was also an incresae in nerve tension at 5 degrees internal rotation. When stability of the foot and internal rotation were compared independently each resulted in an increase in tibial nerve tension, however, when acting together they did not significantly compound the increase in nerve tension. This study clearly demonstrates that tibial nerve tension is increased in an unstable foot compared to a stable foot during eversion, dorsiflexion, combined dorsiflexion-eversion and when cyclically loaded with increasing degrees of internal rotation.

R.W. SOAMES

TRAINING

The effects of serial stretch loading on stretch work and stretch-shorten cycle performance in the knee musculature. Benn C, Forman K, Mathewson D, Tapply M, Tiskus S, Whang K, Blanpied P. Journal of Orthopaedic & Sports Physical Therapy 1998: 27; 412–422.

On the basis that training methods employed to optimize stretch-shorten cycle performance and the ability of an active muscle to