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A comparison of the use of PRP Versus Hypertonic glucose in the treatment of physiotherapy resistant sacroiliac joint Incompetence

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Introduction: The sacroiliac joint (SIJ) can become dysfunctional through trauma and/or pregnancy. The mechanism involves direct or repetitive microtrauma to the buttocks/lower back. Treatment with specialised physiotherapy alleviates the problems in ~80% of cases. The remainder may respond to prolotherapy (hypertonic glucose injections into the dorsal intra-osseous ligament (DIOL)) after multiple injections. We hypothesised that the response may be more rapid with injection of platelet enriched plasma (PRP) into the DIOL under ultrasound guidance.

Materials and methods: Following Ethics approval a study was undertaken to compare the efficacy of PRP injections Vs Standard prolotherapy. A group of 39 patients (32F, 7 M, Age range: 18–70 yrs) was studied and the results compared to the control group who had received hypertonic glucose injections. All patients were assessed clinically at baseline, 3 and 12 months. Outcome measures included VAS, Roland-Morris questionnaire and Quebec Back Pain inventory, as well as clinical tests of SIJ incompetence.

Results: The outcome measures of change in pain scores, improvement in function between the groups was superior for the PRP group, All PRP patients experiencing significant improvement in pain score and function. The number of injections required was less for the PRP group (mean of 1.6) than the controls (mean 3.0).

Discussion/conclusion: PRP is a viable alternative to hypertonic dextrose injections into the DIOL in patients who have failed physiotherapy for SIJ incompetence. It is better tolerated as less injections are required and avoids radiation exposure in a relatively young group of patients.

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Exercise is medicine in the 21st century – Emphasis on efficacy, dosing, and safety/toxicity

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Substantial evidence from epidemiologic and cohort studies has established the critical importance of physical activity (PA), exercise training (ET), and overall levels of cardiorespiratory fitness (CRF) in the prevention and treatment of cardiovascular diseases (CVD). In fact, low levels of CRF may be the strongest CVD risk factor and predictor of higher mortality, and many studies show that relatively fit subjects with certain disorders, such as obesity, hypertension, dyslipidemia and diabetes, have considerably better prognosis than do unfit subjects without these disorders. The role of low PA as the fundamental cause of obesity will be discussed, as well as low levels of CRF explaining the obesity paradox. The potential benefits of PA/ET and increases in CRF to protect against CVD will be discussed, especially the impact on psychological risk factors, such as depression, anxiety and hostility and overall high levels of psychosocial stress to increase mortality risk, especially in patients with established CVD, such as coronary heart disease (CHD). Even small improvements in CRF and peak VO2 can produce marked reductions in depression and psychological risk factors and lead to marked reductions in mortality risk in cohorts of CVD patients, such as CHD and heart failure. Most of the evidence indicates that the ET benefits especially occur at low doses; in fact, in our major running studies, quite low doses of running appear to produce the greatest reductions in CVD- and all-cause mortality during long-term follow-up studies. On the other hand, high doses of running may be associated with some loss of the ET/running benefits; and very high levels of ET (e.g. marathons and triathlons) are associated with potential cardiotoxicity, which will be briefly discussed. Exercise is Medicine and optimal dosing for this potentially beneficial therapy will be discussed for long-term prevention of chronic diseases, especially CVD and premature mortality.

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Use of the King-Devick test and Brain Gauge for the management of concussion

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Although there is an increasing body of evidence in relationship to sports-related concussion, these injuries do occur outside of the sporting field. For example, in New Zealand, over a five-year period, there was an average of one ACC injury claim lodged every 88 min for a sport-related traumatic brain injury costing a total of $83 million NZ dollars. When including all other traumatic brain injuries, over the same reporting period, there was an average of one ACC injury claim lodged every 26 min costing a total of $1.4 billion NZ dollars.

Recovery from these injuries are difficult to diagnose and often difficult to track. Should a person receive a second concussion, while still recovering, the injury can be much more serious, if not fatal. As such, during the period between concussion and full recovery, it is critical that the person not become reinjured. In the initial period, concussions can have adverse effects on cognitive function, balance and have a diverse number, and severity of symptoms. There is an increasing body of evidence reporting that balance and cognitive deficits, and the symptoms of a concussion will return to normal within 10 days for much of the population. However, for a approximately 8% of people (based on Axis Sports Medicine clinic and ACC data in New Zealand), this recovery can take longer than 10 days before return to normal activities.

It has been reported that although people may have clinically recovered from a concussion (i.e. no signs or symptoms), some may not have physiologically recovered (e.g. cerebral blood flow, cortical excitability). The period of physiological recovery may outlast clinical recovery time, but the duration of this is unknown. It has been reported that for some people abnormalities that occur as a result of a concussion can remain for up to 45 days post injury despite being clinically cleared to return to their normal activities.