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**Cyclo-ssage Pro-Personal Therapy System. [PPTS]  
Accelerated recovery.  
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### **Accelerated recovery with Pro personal therapy system**

Accelerated post-exertional exercise recovery is a new concept that enables the individual to recover quicker between training and competition sessions. At Barley Cliff Sports UK, Cyclo-ssage Pro personal therapy system is providing ground breaking rehabilitation-recovery programs that positively impacts on performance.

### **Introduction**

Competition at all levels in the modern era dictates that all participants train harder. The margins of competition prize money, contracts and sponsorship deals further compound the need for the aspiring professional athlete to be exerted to the extremes of their physiological limits both at training and in competition.

The extremes of physiological training confer optimum performance to the athlete with the added advantage to soft tissues of resilience against injury on completion. There is however a paucity of information on best techniques for optimising recovery after such exertional training.

Recently the concept of active recovery has been highlighted and the most essential impact to date of active recovery is in the use of the Cyclo-ssage PPTS.

### **Conventional techniques for rehabilitation**

Following an exertional exercise session, sport specialists recommend that fluid and energy losses are adequately replaced. Hence, high-energy high protein meals with fluid replacement like for like should be encouraged.

Alternative therapies such as stretching and post event massage are viewed favourably in the current era.

Adequate rest through sufficient sleep and wake periods is also recommended. However, these modes of passive recovery have been associated with prolonged duration of post session stiffness, significant power output reduction and "indolent motor unit syndrome". This syndrome is characterized by infiltration of regenerating motor units by sub-optimal muscle fibers that function in a spectrum range lower than that of the adjacent units, and as such are prone to sprains at maximal effort performance. For these reasons most experts consistently advise against prolonged passive recovery, as it is detrimental to performance.

### **Post exercise muscle physiology**

Following the completion of any training or competitive session, metabolic waste in particular lactic acid begins to accumulate in the muscles that have just been exerted. Elevations in the local lactic acid concentration can be detected in the muscle group that have been exerted within 40 minutes of exercise. Maximal levels of lactic acid will be found in the muscle groups that were exerted the most within twelve to twenty four hours post session.

Eccentric muscle contraction generates significantly higher levels of lactic acid than is generated following concentric muscle contraction. However stiffness and soreness will occur following both types exertional training.

### **PPTS accelerating recovery and enhancing rehabilitation**

Cyclo-ssage PPTS elicits physiological low amplitude motor unit excursion contraction that improves baseline mitochondrial metabolism, circulatory flow and nutrient distribution accelerating post exertional recovery.

Active recovery after an exertional session refers to gentle muscle-motor unit movement that correlates with a modest increase in the basal metabolic rate sufficient to improve circulation within the exerted motor units. This is achieved by intermittent treatments on the PPTS on immediate completion of a maximal effort session. Three further treatments at twelve, twenty-four and forty eight hours post-exertional sessions complete our current protocol. The duration of each treatment has been standardised for thirty minutes.

Subjects returning for assessment report no residual stiffness, but improved range of movement across all joints and greater power output.

Ultimately, accumulated waste products (particularly, lactic acid) from the maximal effort session are removed at a relatively faster rate with the Cyclo-ssage PPTS. Lactic acid is responsible for the residual post exercise soreness in muscles. Reduction in serum concentration of lactic acid has been shown to correlate with greater flexibility and higher power output.

The rapid removal of lactic acid by the PPTS therefore accounts for the significant improvements in our subjects performances.

Post exertional session induced muscle tissue injury leads to an influx of fluid that will result in an elevation of intramuscular pressure. Soft tissue and in particular muscle swelling will contribute to the activation of pain receptors in that scenario. Active recovery based treatment with the PPTS will move fluid away from the muscle.

This results in less stiffness and soreness, but more importantly, improved physical performance.

The added benefit of the PPTS in my practice is its ability to generate consistent stimulatory impulse focused on the exerted motor units in a manner that conventional treatments are unable to. Excessive digital pressures during manual therapeutic massages can in fact generate higher levels of lactic acid in the subject.

Manual therapeutic massages have been known to exacerbate post exercise rhabdomyolysis further impeding power output for the athlete.