

## The Key in the Initial Success of Chronic Pain Treatment

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Yoga is a physical and mental practice with origins dating back to more than 5000 years in India. This discipline strives to obtain an internal state of peace [1]. Apart from the spiritual goals, the physical postures or *asanas* of yoga can help to diminish anxiety and assist with helping the body to become more flexible. Yoga could be utilized as a physical therapy intervention as well as a total body conditioning/training program. We believe in the benefits of yoga so completely that we recommend this kind of "special" exercise to all of our patients suffering from chronic pelvic pain.

Physiotherapy (PT) is a health care career that incorporates the therapeutic use of physical agents or modalities, such as massage, ultrasound and exercises to name a few. In 1958, the World Health Organization (WHO) defined physical therapy as: "The science of treatment through: physical means, therapeutic exercise, massage and electrotherapy. Moreover, PT involves performing various physical examination tests including muscle strength tests and joint range of motion, to determine functional capabilities. Other tests including vital capacity measurements as well as special selective tissue tension tests are used as a comprehensive method to come up with a clinical diagnosis. For our practice, the discipline of PT provides a complimentary addition, creating a synergy between physiotherapy and medical treatments that together work to benefit our patients who are seeking pain relief.

Both medicine and PT work together to achieve the same end, that is to relieve the chronic pain in the patients we see who are suffering from various conditions.

When looking at the discipline of Yoga, it is immediately evident that Yoga and PT share a common feature: the stretching. Stretching refers to the practice of gentle exercises designed to help prepare the muscles for greater effort and to increase the range of motion in the joints. During stretching, muscles are lengthened beyond their rest position and this turns out to be beneficial to a healthy body. The benefits of stretching for patients with pelvic pain include: increasing joint range of motion; increasing flexibility of the groin muscles, tendons, fascia, ligaments, joint capsules and skin. Stretching can also help to avoid common sports injuries by improving the coordination of agonist-antagonist muscles and preventing muscle stiffness after exercise. All of the above mentioned benefits have been previously documented by other authors [2,3]. In the paper by Weerapong et al. [2] a reduction in anxiety, relaxation and an improvement in mood state was reported. These same benefits of stretching are therefore likely expected when it comes to helping athletes, by enhancing their performance and reducing injury risk.

Cunha et al. [3], compared the effect of conventional static stretching and muscle chain stretching ((upper trapezius, levator scapulae, suboccipitalis, erector spinae, gluteus maximus, ischiotibialis, triceps surae, and foot intrinsic muscles) in female patients suffering chronic neck pain. These authors showed that conventional stretching and muscle chain stretching, in association with manual therapy, were equally effective in reducing pain, improving the range of motion, and quality of life for the study participants.

Another common characteristic between Yoga and PT is relaxation. The act of relaxation induces a release of muscle tension and a return to equilibrium. Pain is worsened by stress, and stress could be magnified by

psychological anxiety. Stretching can induce a state of mental relaxation and as such could help decrease pain perception as well as assist in various other heightened mental states such as helping the body better cope with sequelae associated with trauma. Hypercortisolemia (excessive levels of the stress hormone cortisol), is well-known to occur in depression and stress. A study [4] was done showing that Yoga practice proved useful as a means to reduce the parameters of stress, including actual lowered blood levels of cortisol. This study divided subjects into three groups (yoga alone, yoga along with antidepressant medication and antidepressant medication alone). The study was conducted at a tertiary care psychiatry hospital. A validated yoga module was used as therapy taught over a month and included at home daily practice. 54 out-patients suffering from clinical depression were rated on the Hamilton Depression Rating Scale. These subjects also had their serum cortisol measurements taken at baseline and after 3 months of yoga practice. The findings of this study supported that yoga may act at the level of the hypothalamus by its 'anti-stress' effects (shown as a reduction in cortisol), to bring about relief from depression.

Another common aspect between Yoga and PT is pain desensitization. Desensitization is a method used to decrease or remove a noxious pain stimulus. In PT pain desensitization may be achieved by edema control, desensitization specific techniques, and functional training. Pain desensitization would be the application of repeated sensory stimuli that produces no pain or discomfort, but may be unpleasant in a hypersensitive area. The elements used for desensitization depend on the involved area and consist of various textures, pressure, vibration, and heat or cold.

Desensitization follows a progressive method of gradual introduction of various stimulus applied to the hypersensitive region. The sensory stimulus ranges from low to high displeasure and may include: silk, cotton, rugged or rough textures. The progression may take many days or weeks according to sensory disturbance levels. Desensitization can minimize pain response to various stimuli. However, the affected area may not tolerate contact with a particular stimulus. The goal of desensitization is to inhibit or interrupt the perception of the previously uncomfortable stimulus as painful. This does not ensure that this stimulus is now going to be perceived as pleasant or enjoyable, but, the response given will no longer be perceived as extremely painful. This effect was demonstrated in a randomized clinical trial by Whitehurst and colleagues [5]. In their study, these authors reported the following data: a total of 402 patients were randomly assigned to a brief pain management program (BPM)

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or PT. The PT program was designed to be consistent with best current manual physiotherapy practice in the UK. Treatment approaches were standardized, with emphasis on diagnosing and treating biomechanical dysfunction of the spine with manual therapy techniques (including mobilization, manipulation, or other soft-tissue treatment approaches) and back-specific exercises coupled with ergonomic advice. They adopted a health care perspective, examining the direct health care costs of low back pain. Outcome measures were quality-adjusted life years and 12-month change scores on the Roland and Morris disability questionnaire. Whitehurst and colleagues [5] concluded that PT is a cost-effective primary care management strategy for low back pain. However, the absence of a clinically superior treatment program raises the possibility that BPM could provide an additional primary care approach, administered in fewer sessions, allowing patient and doctor preferences to be considered.

While both PT interventions and Yoga stretch muscles, soft tissue, and increases the range of motion in joints, Yoga practice includes the philosophy of taking care of your body, and teaches one how to take charge of their experience even when one is in pain. These claims are supported in a study by Williams and colleagues [6]. These authors utilized Iyengar yoga (which is a form of Yoga that not only emphasizes asanas, but also mental discipline and holistic health) as an intervention to address back pain. Patients receiving yoga showed significant reductions in pain and functional disability, compared to the controls, after 3 months follow-up.

From another point of view, we can see the relationship between Yoga and PT in helping to assist with sleep. Yoga may aid the treatment of insomnia through relaxing physical exercises and techniques of breathing thereby promoting regular sleep without having to take medicine to induce sleep. Medicine can interfere with the natural sleep cycle of the body and have side effects. Those who have difficulty falling asleep or staying asleep can try yoga sequences of deep relaxation and meditation, for example: lying down for half an hour before bedtime to promote a pleasant dream. The causes of insomnia can be removed by the continuous practices of yoga. To support these claims, we found in medical literature, a randomized clinical controlled trial by Hariprasad et al. [7]. Hariprasad and colleagues reported the following data: a total of 120 subjects from nine nursing homes were randomized in to yoga group (n=62) and waitlist group (n=58). Subjects in the yoga group were given yoga intervention daily for 1 month and weekly for 3 months. Subjects were encouraged to practice yoga without supervision for 6 months. Subjects in the waitlist group received no intervention during this period. Subjects were evaluated with World Health Organization Quality of Life questionnaire and Pittsburgh Sleep Quality Index at baseline and after 6 months. The authors concluded that Yoga improves the quality of life and sleep quality of these patients living in retirement homes.

PT may contribute to help with insomnia, through hydrotherapy, electrotherapy or lymphatic drainage, etc, constituting an "ideal" method of relaxation, especially when applied to the face, head and neck. Sleep disturbance is a very common clinical symptom in patients with chronic pain, related to physical inactivity and depression. To support these claims, we have found in medical literature a randomized clinical controlled trial; Eadie et al. [8] reported a paper with the following data: 20 participants with chronic low back pain were randomly assigned to a walking program, supervised exercise, or usual physiotherapy (advice, manual therapy, and exercise). Sleep was assessed by Pittsburgh Sleep Quality Index, Insomnia Severity Index and Pittsburgh Sleep Diary. The authors determined the effectiveness of physiotherapy for sleep disturbance in chronic low back pain.

In conclusion, in our practice if we have any patient suffering from chronic pain, we recommend that they should initially fulfill three conditions to alleviate their chronic pain: stretching of the body muscles, to sleep as well as possible, and to maintain a stress free mind. All of this is possible to obtain in some measure through Yoga, PT and traditional medicine all working together.

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