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APPLICATIONS OF THE AI CHI METHOD IN AQUATIC PROGRAMS

Aplicațiile metodei Ai Chi în programele acvatice

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Abstract.
The Ai Chi method is based on the realization of an aquatic exercise program involving relaxation methods. It is designed to help the fluid and strong progression of the movements performed by the patient and the therapist. Ai Chi aquatic therapeutic programs are beneficial for all parties involved in the activity, the patient and the physical therapist.

The many benefits of Ai Chi come from respiration and relaxation, linked to the relaxed contemplative state. The method has a strong positive impact on removal of musculoskeletal and chronic pain in cardiopulmonary conditions, as well as in vascular and metabolic conditions and in psychological, neurobiological and cognitive conditions.

Keywords: aquatic therapy, method.

Introduction

The Ai Chi method is based on developing an aquatic exercise program that involves relaxation methods. It is designed to help the fluid and strong progression of the movements performed by the patient and the therapist. Ai Chi aquatic therapeutic programs are beneficial for all parties involved in the activity. Through accurate, rhythmic and relaxed executions, the area of movement and mobility can be improved. Ai Chi technique is created by combining the Tai Chi method with Shiatsu concepts and Watsu techniques. It is made from vertical to water-to-shoulder levels, using deep breathing combinations and slow, wide arms, legs and trunk movements.

In Ai Chi practice, posture and activity are emphasized through the vertical axis of the body to keep the mind and body in balance (Konno, J., 2004). Ai Chi is a new way of working for high-speed movements or for those who have developed incorrect motion models as a result of a lesion or surgery.

Ai Chi is aware of muscle activity and movement patterns, with attention to body posture and breathing, combined with visualization and vertical positioning images that help place the body in the right alignment.

Like Tai Chi, Ai Chi combines slow, fluid rhythmic movements with controlled breathing. Motion patterns involve large body muscle groups in symmetrical or asymmetric movements in both feet or on one foot, exercises that can improve mobility and strength. When combined with diaphragmatic breathing, these motion patterns can amplify relaxation and reduce pain.

Most of the benefits in using this method in the hydrotherapeutic recovery process are reducing stress, increasing energy levels, increasing caloric intake and better movement, are a result of deep breathing. Breathing is physical function both voluntarily and involuntarily (Rakel, D., Mercado, M.A., 2007). To get a relaxed state, breathing and mind must be in harmony to control breathing.

Recently have been developed clinical studies on the benefits of Tai Chi techniques combined with hydrotherapy. Both types of treatment include physical training of balance, mobility, strength, coordination and sensory input that could complement each other.(Salvador, I., M.H., 2015).

In Ai Chi, diaphragmatic breathing, respiratory physiological system is most effective:

- extends the diaphragmatic floor of the descending thoracic cavity (Guyton, A.C., 1981) and determines the enlargement of the chest;

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- it produces negative pressure in the chest, which forces the air in the lungs and pulls blood in the chest, increases venous return to the heart (Rakel, D., Mercado, M.A., 2007);
- improves the lymph flow, which is rich in immune system cells, thus contributing to the prevention of infection in the lungs and other tissues (Rakel, D., Mercado, M.A., 2007);
- it draws oxygen in the deepest parts of the lungs of the lungs where better exchange takes place, increasing the supply of oxygen and nutrients to tissues and the removal of carbon dioxide (Rakel, D., Mercado, M.A., 2007);
- is necessary relaxation of abdominal muscles during inspiration.

Chest respiration is ineffective because the largest amount of blood flow occurs in the lower lobes of the lungs, areas that are not well oxygenated. Chest breathing moves up the chest cavity during breathing at maximum capacity during intense exercise.

Benefits of Ai Chi. Many of the benefits of Ai Chi come from breathing and relaxation, related to the relaxed contemplative state.

Musculoskeletal and chronic pain as an example for which this method is very appropriate to practice.

Practicing techniques of slow motion and diaphragmatic breathing have demonstrated:

~ increasing relaxation;
~ lowering of muscle tension;
~ improving the control of symptoms;
~ facilitating recovery after back pain related conditions;
~ in scoliosis conditions and carpal tunnel syndrome;
~ in musculoskeletal or surgical injuries and sports injuries, derived from the effects of buoyancy, mild and controlled movement, and coordinated breathing;
~ relieves the symptoms of osteoarthritis;
~ increasing the level of satisfaction with the general health;
~ increases muscle strength and lower end resistance;
~ positively affects the postural stability, important in the elderly;
~ reduces the response to stress-induced pain that traditionally increases muscle tension;
~ alignment, balance and stabilization are skills that can be improved by slow motion techniques; the balance learned in water translates well on land;
~ sinking joints diminishes compression and joint swelling (Cole A., Becker B., 2004);
~ water properties combined with Ai Chi movements can improve the range of motion and mobility.

From a musculoskeletal point of view, the area of movement is an effective means of maintaining the integrity of connective structures and soft tissues.

Cardiopulmonary, vascular and metabolic conditions is another reason for which this hydrotherapeutic method can be successfully used.

In different studies of Tai Chi programs, positive cardiovascular effects were found (Lai et al., 1995) as well as:

~ oxygen consumption and significantly higher workload;
~ increased cardio respiratory function;
~ soft tissue flexibility;
~ the practice of slow motion techniques and diaphragmatic respiration activates the inhibitory parasympathetic nervous system. (Geigle P. R., Brody L. T., 2009);
~ decreases heart rate, reduces blood pressure;
~ improving respiratory and cardiovascular function;
~ it reduces the consumption of oxygen;
~ creates a neutral respiratory coefficient and lowers blood lipid levels (Chopra D., 1989);

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~ reduce vegetative instability and improve heart rate variability (Pal, Velkumary, Madanmohan, 2004),
~ Ai Chi respiration can inhibit neuronal responses because a stress response produces an increase in the respiratory rate, decreases the tidal volume, and a change in chest breathing occurs (Gatti J., 2003);
~ the challenge of a parasympathetic or inhibitory response increases vagal modulation, decreases heart rate (Courtney R., 2000), thus improving the breathing function;
~ diaphragmatic breathing exercises reduced postoperative complications in patients who underwent cardiac or pulmonary surgery (Chumillas et al 1998);
~ lowering of blood pressure and anxiety are the results of relaxation accompanying diaphragmatic respiration (Gatti J., 2003);
~ Ai Chi breathing as a form of treatment is beneficial in lowering essential hypertension (high blood pressure due to unknown causes) that is common in our society.

Recent studies confirm the benefits of including this form of therapy in various aquatic treatments „Older people with osteoarthritis of the hip or knee can obtain clinically worthwhile improvements in physical function from hydrotherapy or Tai Chi". (Mackintosh S., 2008)

Also, Wortley and all found that „Tai Ji was also effective for improving mobility". (Wortley, M. et all, 2013).

For psychological, neurobiological and cognitive conditions.

Practicing slow motion techniques accompanied by diaphragmatic breathing produces activation of the right hemisphere; decreases sympathetic nervous system excitation and increases awareness; lowers the activation of the hypothalamic - hypophysi - suprarenal axis (Courtney R., 2000) and improves the psychological state associated with chronic illness, anxiety and depressive disorders, anger management and stress-related arrhythmias (Geigle P.R., Brody L.T., 2009).

Diaphragmatic breathing has been shown to alleviate the response to stress; stress that can contribute to malaise such as back pain, neck tension, headaches, fibrochastic nodules, muscle spasms, indigestion, stomach burns, stomach ulcers, palpitations, shoulder and chest pain, insomnia, sleep disturbances, anxiety , depression, dyspnea, nausea and fatigue (Rakel D., Mercado MA, 2007). Stress increases muscle tension and vasoconstriction, thereby reducing blood flow throughout the body (Rakel D., Mercado M. A., 2007). "Throat tension causes muscle aches and headaches, stomach tension affects digestion and tension in the body increases blood pressure. Relaxation through diaphragmatic breath reduces blood pressure and workload of the heart and decreases muscle tension "(Geigle P.R., Brody L.T., 2009).

Conclusions

This therapeutic method is not included in our country's preventive and treatment hydrotherapy programs, in part because hydrotherapy is not sufficiently promoted as a therapeutic modality but also because this practical application is not included in specialized textbooks for students.

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