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Effects of model of exercise on type-2 diabetes progression
Sub Title:- Exercise is the new pill for the prevention and treatment of chronic diseases

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	Control N=12	Resistance N=10	Aerobic N=9	Pilates N=11
Body composition				
Weight	Ns	Ns p=0.06	Ns	Ns
Abdominal perimeter	Ns	Ns p=0.06	↓*	Ns
% body fat	Ns	Ns	↓*	Ns
Metabolic markers				
Glucose	Ns	↓*	↓*	Ns
Insulin	Ns	Ns	Ns	Ns
HOMA	Ns	Ns	Ns	Ns
HbA1c	Ns	Ns	Ns	Ns
Circulating markers of endothelial function				
Hcy	↑*	Ns	Ns	Ns ↑ p=0.06
NO	Ns	↓*	Ns	↓*
VCAM	Ns	Ns	Ns	Ns ↓ p=0.06
ICAM	Ns	Ns	Ns	↓*
VEFG	Ns	Ns	Ns	Ns

Stroke is a leading cause of disability. There are common motor impairments after stroke such as hemiparesis in the upper extremity contralateral to the affected hemisphere. Many stroke patients may suffer long term upper limb motor deficits. This decrease in hand dexterity could negatively affect the performance of daily activities that need skilled upper limb use such as grasping force control and coordination as well as appropriate fine motor skills. Participation, satisfaction and activity of stroke patients decline and difficulty in using the paretic hand in daily tasks and functional limitation have been associated with decrease in participation and quality of life. Thus, improving the affected hand function of chronic stroke patients is vitally important. It has been reported that there is functional re-organization after stroke and that such cortical plasticity might be correlated with upper limb motor recovery. Understanding the neurophysiological changes after stroke and how these changes are associated with hand motor recovery as well as how to promote such plastic changes would assist in developing effective therapeutic interventions that are based on neurophysiological evidence in order to resolve upper limb motor impairments in stroke patients. During the last two decades, the significant progress in neuroscience has led to novel concepts for rehabilitation interventions post stroke. The constraint-induced movement therapy (CIMT) has been shown to improve function and amount of use of the paretic hand of chronic stroke patients and is thought to induce cortical plasticity. The aim of the speech is to demonstrate and discuss the role of cortical re-organization (plasticity) in motor recovery of the paretic upper extremity of chronic stroke patients as well as the efficacy of CIMT in improving upper extremity motor function of chronic stroke patients and its potential underlying mechanism. It also shows the potential cellular mechanisms that underlie neural plasticity.

Sub Title:- Exercise is the new pill for the prevention and treatment of chronic diseases

Physical activity represents a cornerstone in the primary prevention of at least 35 chronic diseases. Today exercise has a role as therapy in diseases that do not manifest mainly as disorders of the locomotors system. In physiotherapy it is relevant to train professionals who know how to prescribe exercise effectively based on the theoretical-practical knowledge of the biological bases. Evidence suggests that in certain cases exercise therapy is as effective as medical treatment and in special situations more effective or increases its effect. The accumulated knowledge is now so broad that it has to be implemented. Although there is still a need to define the optimal type and dose of exercise, explore whether high-intensity interval training as well as low intensity and long-term training or other newer exercise modalities will have a place for specific populations. Health systems should create the necessary infrastructure to ensure that supervised exercise can be prescribed as a fundamental part of treatment. Physiotherapists should promote a physical active lifestyle. It is necessary educators who know how to evaluate globally to each individual the morphological type and the factors of risk not modifiable as those that if can be modified as the diet and the exercise.

Biography

Juan Castellano is an authority and leader of opinion in the prescription of exercise for health. He provide education to numerous institutions as Universities and hospitals, wellness centers and other health associations worldwide. He is a pioneer in the formal training of the prescription of exercise for health and Pilates method in physiotherapy in Spain. His programs have been accredited by professional colleges of physiotherapy, universities and by the National Continued Training department of the Ministry of Health. He begun his pre-doctoral program initiating clinical trials on diabetes type II in 2009. His research focused on the exercise and life style for promoting health, specifically the biological mechanisms. Nowadays, actually he is studying how the different type of exercises promote brain health and the effects of resistance and endurance exercise in partial autophagy deficiency in mice. His current project study the mechanisms of the exercise to promote health: circulating miRNA characterization and validation as epigenetic regulator of molecular response to exercise. (Start date: 01/01/2016; finish date: 31/12/2018)

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