11th International Conference of Sport Kinetics

Halkidiki, Greece

25 – 27 September 2009

Dr. Oleksandr Krasilshchikov
Pusat Pengajian Sains Kesihatan

11th Sport Kinetics

Monday, June 29, 2009 9:14 PM

From: "Malamidou, Maria" <mariam@triaenatours.gr>

To: hikatso@yahoo.com

11th International Conference of Sport Kinetics
Current and Future Directions in Human Kinetics Research

Dear Mr.Krasilshchkov,

On behalf of the Scientific Committee of the above mentioned Congress we are pleased to inform you that your paper titled: « EFFECTS OF COMBINED FLEXIBILITY, STRENGTH AND AEROBIC TRAINING ON PRIMARY KNEE OSTEOARTHRITIS»
has been accepted as an Oral Presentation.
Please note that you will receive another e-mail regarding your date of Presentation.
We remain at your disposal for any further information you may require.
Yours Sincerely,
Malamidou Maria
Congress Department

PRELIMINARY PROGRAMME OVERVIEW

Time	Thursday, 24.09.2009	Friday, 25.09.2009	Saturday, 26.09.2008	Sunday, 27.09.2008
8:00		Arrivals and Registrations		
8:30				
9:00				
9:30			**Assoc. Prof. Dr. Christos Papadopoulos, Gantiraga E, Gissis I, Bountolos K, Vrabas I.** "The influence of difference the technique in mechanical and neuromuscular characteristics in vertical plyometric jump"	**Prof. Dr. Albrecht L. Claessens** "Body composition assessment in athletes, methodological considerations with emphasis on air displacement plethysmography"
10:00		Opening Ceremony	**Prof. Dr. Gerd-Peter Brüggemann** "Environment and technology impact human kinetics in physical activity"	**Prof. Dr. Peter Hirtz – Prof. Dr. Gudrun Ludwig** "Orientation in sport - current and future directions"
10:30			Coffee Break	Coffee Break
11:00		**Prof. Dr. Vassilis Klissouras** "Limits of human performance: Body & Mind		
11:30		**Prof. Dr. Wlodzimierz Starosta** "Relationship between rhythm of movements and respiration in physical education and sport"	Oral Presentations	Oral Presentations
12:00		Coffee Break		
12:30		Oral Presentations	Symposium	Symposium
13:00				
13:30				
14:00		Lunch	Lunch	Closing ceremony (C. Papadopoulos, W. Starosta)
14:30				
15:00				
15:30		**Prof. Dr. James Skinner** "Influence of genetic factors on physical activity and fitness: Implications for promoting eercise"	**Prof. Dr. Paavo V. Komi** "The current status and future directions on research of neuromuscular function in human locomotion"	
16:00		**Prof. Dr. Robert M. Malina** "The future of youth sports: A critical evaluation of talent identification, selection and development"	**Prof. Dr. Christos Kotzamanidis** "Neuromuscular differences between prepubertal children and adults after a stretch - shortening cycle fatigue test"	Excursion in Mount Athos (Lunch in the boat)
16:30		Oral Presentations	Oral Presentations	
17:00	Arrivals and Registrations			
17:30				
18:00		Poster Presentations & Product Exhibition	Symposium	
18:30				
19:00		Coffee Break		
19:30		IASK General Meeting	Coffee Break	
20:00			Poster Presentations & Product Exhibition	
20:30				
21:00			Gala Dinner	
21:30				
22:00		Welcome Reception		

EFFECTS OF COMBINED FLEXIBILITY, STRENGTH AND AEROBIC TRAINING ON PRIMARY KNEE OSTEOARTHRITIS

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Introduction. Osteoarthritis has been considered as one of the major health problems in the world (Eyigor, 2004). The physical disability arising from knee osteoarthritis prevents the performance of daily life activities such as walking, squatting and climbing stairs. Physical disability also has negatively affect patients' life quality (Sisto, 2006). Several factors cause the occurrence of physical disability including pain, limitation of joint movement, muscle weakness and coordination impairment (Diracoglu, 2005). Despite the well known fact that exercises are the effective treatment in osteoarthritis, exact amount and types of exercise that would be beneficial and not destructive to the affected joint are unknown and most effective types and combinations of exercise as well as the amount are still unclear (Deyle et. al., 2005).

Methods. Sixteen middle aged women aged 50–64 years from among the patients diagnosed with knee osteoarthritis were recruited for the study and were randomly assigned to either intervention (n=8) or to the control group (n=8). Subjects were tested before and after 8 weeks of progressive combined training program, with three sessions a week frequency, in six minutes walking distance to measure the functional exercise capacity, WOMAC questionnaires to access pain symptoms and patients' ability to perform daily activities and isokinetic testing with Biodex Isokinetic Dynamometer to access patients' knee peak torque.

Results. Walking distance in intervention group has increased significantly by 14.3% ($p<0.05$) whereas it reduced by 3.4% in control group at post intervention tests. Pain scores were significantly reduced by 44.1% in the intervention group ($p<0.05$), whereas they were increased by 48.8% in control group ($p<0.01$). The difference in pain score between control and experimental groups was statistically significant at the post test ($p<0.001$). Physical function scores were significantly reduced by 55.0% in the intervention group ($p<0.001$) and increased by 30.5% in the control group ($p<0.01$). The difference in physical function score between groups was statistically significant ($p<0.001$) in the post intervention testing. Right and left quadriceps muscles peak torque values at 120°/s and 180°/s angular velocities in intervention group at the post test have increased significantly. Peak torque value of right quadriceps muscle at 120°/s and 180°/s increased by 41.2% ($p<0.01$) and 32.2% ($p <0.05$) respectively. Peak torque of left quadriceps muscle at 120°/s and 180°/s increased by 103.7% ($p<0.001$) and 30.8% ($p<0.01$) respectively. There were statistically significant differences in peak torque values of right and left quadriceps muscles at both angular velocities between intervention and control groups after completion of the intervention program with obvious and statistically significant improvement in the intervention group in comparison to the control group.

Discussion. Short-term training program combining flexibility, strength and endurance activities in each session of eight weeks partially supervised exercises program lead to significant improvements in quadriceps muscles peak torque, six minutes walking distance, pain and disability assessment in middle aged women with early stage primary knee osteoarthritis. Designed training programme is easily applicable, efficient, cost free and performable anywhere. It combines the positive effects of flexibility, strengthening and aerobic exercises in one exercise prescription programme.

References:

Deyle GD, Allison SC, Matekel RL, Ryder MG, Stang JM, Gohdes DD, Hutton JP, Henderson NE, Garber MB. Phys Ther. 2005 Dec; 85(12): 1301 – 1317

Diracoglu D, Baskent A. & Celik A. J Clin Rheumatol. 2005; 11: 303-310

Eyigor S. Clin Rheumatol. 2004; 23: 109 – 115

Sisto SA, Malanga G. Am J Phys Med Rehab. 2006; 85: 69–78