

Konstantina Dipla, Ph.D., Associate Professor

Description of her work

Dr Dipla is currently an Associate Professor at the Department of Sports Science at Serres, Aristotle University of Thessaloniki, Greece. She received her **Ph.D. degree** in Exercise Physiology (emphasis on cellular functions and exercise; E-C coupling and calcium homeostasis in cardiac hypertrophy and heart failure), from Temple University, PA, USA, College of Health, Physical Education, Recreation and Dance (1997; Adv. A. Paolone). Dr. Dipla completed her **Post-Doctoral** studies (emphasis on cellular functions, cardiac myocyte hypertrophy and atrophy in health and disease), in the Department of Physiology, School of Medicine, Temple University, USA (1998). Dr Dipla's work is in the field of Clinical Exercise Physiology. Her research interests focus on mechanisms of chronic disease (hypertension, diabetes, obesity, cardiopulmonary disease) and their regression as a result of exercise training.

During her Doctoral studies (Temple University, USA), she received training on cellular contractile properties of cardiac muscle and studied cardiomyocyte calcium homeostasis in health and disease (Supervisor Dr. S.R. Houser). Dr. Dipla and her colleagues were from the first groups that successfully isolated cardiac myocytes from failing human hearts and studied mechanisms of reverse heart remodeling with a left ventricular assist device (LVAD). During her studies, she participated in research grants by the American Heart Association and the National Institute of Health (PIs: S.R. Houser and K.B. Margulies). Following the completion of her doctoral studies, she continued her post-doctoral training (Supervisor K.B. Margulies, Temple University School of Medicine, USA), and received an American Heart Association Post-doctoral Fellowship (PA, USA). Next, Dr. Dipla was employed in an Assistant Scientist position (supervisor K. B. Margulies), at the Cardiovascular Research Institute, Temple University. Since 2009, Dr. Dipla is a faculty member, in the Department of Sports Science at Serres (Aristotle University), conducting research in the Exercise Physiology and Biochemistry Laboratory. She is collaborating with the Hypertension Laboratory (dir. Prof. Douma, S.) and the Endocrinology Pregnancy Clinic (Prof. D. Goulis) at Papageorgiou Hospital, investigating the role of exercise in hypertension, obesity, and diabetes. In addition, in collaboration with the Pulmonary Clinic at Papanikolaou Hospital, Dr. Dipla is participating in the implementation of a pulmonary rehabilitation program for individuals with Interstitial lung disease (Collab. A. Markopoulou, MD and Prof. A. Zafeiridis).

Dr. Dipla has published >64 international peer reviewed papers. Her work has been internationally recognized (h index 21 in Scopus and 23 in Google scholar) and has been cited by >1650 authors (Scopus). She serves as a reviewer for several journals (> 25 journals) in Exercise Physiology and health fields. Dr. Dipla received the "*Professional Opportunity Award for Meritorious Research*" from the American Physiological Society (1997). Her research studies received awards by national (Hellenic Society of Exercise Physiology and Biochemistry, Hellenic Thoracic Society) and international (Artery Society) organizations. Dr Dipla's and her students' work have also been recognized by the Aristotle University.

Research Interests

- (i) Exercise and cardiovascular adaptations in the general population and in patients with chronic diseases (heart failure, obesity, hypertension, diabetes and pulmonary disease). Mechanisms of disease and their regression as a result of exercise training.
- (ii) Autonomic nervous system function, baroreceptor sensitivity, skeletal muscle and brain oxygenation (NIRS), and vascular dysfunction in health and disease.
- (iii) Cardiomyocyte functional studies, Calcium signaling pathways in cardiac myocytes (fluorescence microscopy), Left-ventricular Assist devices and cardiac myocyte function

Selected publications:

(complete list at <http://www.ncbi.nlm.nih.gov/pubmed/?term=dipla+k>)

- Dipla K, Triantafyllou A, Koletsos N, Papadopoulos S, Sachpekidis V, Vrabas IS, Gkaliagkousi E, Zafeiridis A, Douma S. Impaired Muscle Oxygenation and Elevated Exercise Blood Pressure in Hypertensive Patients: Links With Vascular Stiffness. **Hypertension**. 2017 Aug;70(2):444-451

- Dipla K, Triantafyllou A, Grigoriadou I, Kintiraki E, Triantafyllou GA, Poullos P, Vrabas IS, Zafeiridis A, Douma S, Goulis DG. Impairments in microvascular function and skeletal muscle oxygenation in women with gestational diabetes mellitus: links to cardiovascular disease risk factors. **Diabetologia**. 2017 Jan;60(1):192-201
- Koletsos N, Dipla K, Triantafyllou A, Gkaliagkousi E, Sachpekidis V, Zafeiridis A, Douma S. A brief submaximal isometric exercise test 'unmasks' systolic and diastolic masked hypertension. **J Hypertens**. 2019 Apr;37(4):710-719.
- Kintiraki E, Dipla K, Triantafyllou A, Koletsos N, Grigoriadou I, Poulakos P, Sachpekidis V, Vrabas IS, Zafeiridis A, Bili E, Douma S, Goulis DG. Blunted cerebral oxygenation during exercise in women with gestational diabetes mellitus: associations with macrovascular function and cardiovascular risk factors. **Metabolism**. 2018 Jun;83:25-30.
- Anyfanti P, Triantafyllidou E, Papadopoulos S, Triantafyllou A, Nikolaidis MG, Kyparos A, Vrabas IS, Douma S, Zafeiridis A, Dipla K. Smoking before isometric exercise amplifies myocardial stress and dysregulates baroreceptor sensitivity and cerebral oxygenation. **J Am Soc Hypertens**. 2017 Jun;11(6):376-384.
- Dipla K, Papadopoulos S, Zafeiridis A, Kyparos A, Nikolaidis MG, Vrabas IS. Determinants of muscle metaboreflex and involvement of baroreflex in boys and young men. **Eur J Appl Physiol**. 2013 Apr;113(4):827-38.
- Dipla K, Zafeiridis A, Koidou I, Geladas N, Vrabas IS. Altered hemodynamic regulation and reflex control during exercise and recovery in obese boys. **Am J Physiol Heart Circ Physiol**. 2010 Dec;299(6):H2090-6.
- Crabbe DL, Dipla K, Ambati S, Zafeiridis A, Gaughan JP, Houser SR, Margulies KB. Gender differences in post-infarction hypertrophy in end-stage failing hearts. **J Am Coll Cardiol**. 2003 Jan 15;41(2):300
- Welsh DC, Dipla K, McNulty PH, Mu A, Ojamaa KM, Klein I, Houser SR, Margulies, KB. Preserved contractile function despite atrophic remodeling in unloaded rat hearts. *Am J Physiol Heart Circ Physiol*. 2001 Sep;281(3):H1131-6.
- Piacentino V 3rd, Dipla K, Gaughan JP, Houser SR. Voltage-dependent Ca²⁺ release from the SR of feline ventricular myocytes is explained by Ca²⁺-induced Ca²⁺ release. **J Physiol**. 2000 Mar 15;523 Pt 3:533-48.
- Dipla K, Mattiello JA, Margulies KB, Jeevanandam V, Houser SR. The sarcoplasmic reticulum and the Na⁺/Ca²⁺ exchanger both contribute to the Ca²⁺ transient of failing human ventricular myocytes. **Circ Res**. 1999 Mar 5;84(4):435-44.
- Dipla K, Mattiello JA, Jeevanandam V, Houser SR, Margulies KB. Myocyte recovery after mechanical circulatory support in humans with end-stage heart failure. **Circulation**. 1998 Jun 16;97(23):2316-22.

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