



Università degli Studi di Verona
Master Degree Science of sport and physical performance;
Master Degree Science in preventive and adapted physical activity
Academic Year 2015/2016

***Endocrinology Course
(module "Endocrinology and
Sport Medicine" – Integrated
Course "Biomedical Control
in Training")***

Teacher:

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Objectives:

At the end of the course students should know:

- The role of endocrine factors in exercise adaptation, the physiological changes and the most common and important pathological modifications of these factors over lifetime;
- The main features of the different types of diabetes mellitus, how to prescribe physical activity in the prevention and treatment of diabetes, the alterations in the mechanisms of exercise adaptation related to diabetes and its treatment;
- The pathophysiology of metabolic syndrome, how to prescribe physical activity in order to prevent and treat metabolic syndrome;
- The consequences of the most common endocrine disorders on exercise performance;
- Interactions between the female reproductive function and exercise performance, and the effects on exercise capacity of the main drugs used to affect physiological and pathological aspects of the female reproductive function;
- Interactions between pregnancy and physical activity, in physiology and gestational diabetes.

Course Program:

- Role of endocrine system in exercise adaptation processes; energetic metabolism at rest and during physical activity.
- Physical activity benefits and barriers to exercise in the elderly. Endocrine system modifications in the healthy elderly that affect hormonal adaptations to physical exercise.
- Obesity and physical exercise.
- Elements of clinics and therapeutic approach to type 2 diabetes; chronic complications of diabetes.
- Medical and motor evaluation in individuals with type 2 diabetes; limitations to physical exercise due to diabetes complications; anti-diabetic drugs and exercise interactions.

- Exercise prescription in the prevention and treatment of type 2 diabetes.
- Metabolic syndrome: diagnostic criteria, prevalence, etiopathogenesis, complications; role of exercise in individuals with metabolic syndrome.
- Elements of clinics and therapeutic approach to type 1 diabetes mellitus; consequences of diabetes and its pharmacological treatment on adaptation to physical activity; effects of different type of exercise on blood glucose levels; therapeutic adaptations to exercise in diabetes.
- Athlete's reproductive alterations and implications; effects of therapy for menstrual disorders on exercise performance; relationships between polycystic ovary syndrome and physical activity.
- Pregnancy and physical activity. Role of physical activity in the prevention and treatment of gestational diabetes mellitus.
- Most common pathological alterations of the endocrine glands in the elderly: general implications and consequences on exercise adaptation.

Exam modality:

Multiple-choice exam, with optional oral exam (to access to oral exam is required a score higher than 24/30 in multiple-choice exam).

Suggested books:

- The endocrine system in sport and exercise. Kraemer WJ and Rogol AD Eds, Blackwell Pub, Malden (USA), 2005
- Endocrinologia e attività motorie. Lenzi A, Lombardi G, Martino E, Trimarchi F. Elsevier Masson 2008
- Handbook of exercise in Diabetes. American Diabetes Association 2002
- Updated literature of the course topics