



UNIVERSITÀ
degli STUDI
di CATANIA

DEPARTMENT OF BIOMEDICAL AND BIOTECHNOLOGICAL
SCIENCES

Master's Degree in Sciences and techniques of preventive
and adaptative motor activities

Academic Year 2020/2021 - 1° Year

FISIOPATOLOGIA DELLO SVILUPPO

6 CFU - 2° Semester

Teaching Staff

AGATA FIUMARA - Module PEDIATRIA - MED/38 - 3 CFU

Email: agatafiumara@yahoo.it

Office: Via Santa Sofia, 78, Clinica Pediatrica

Phone: 0953782424

Office Hours: 8.00 - 9.00 Venerdì

VERONICA VELLA - Module Physiology of development - MED/13 - 3 CFU

Email: veronica.vella@unict.it

Office: via Palermo 636

Phone: 095/7598702

Office Hours: martedì dalle 11:00 alle 13:00

LEARNING OBJECTIVES

▪ PEDIATRIA

Learn normal psychic and motor development of the newborn

Learn most common neuromuscular disorders

understand when suspect a genetic metabolic disease

Learning assessment may also be carried out on line, should the conditions require it.

▪ Physiology of development

The course is aimed at deepening the knowledge and understanding of the hormonal mechanisms that regulate the functions of the human body with particular regard to the role of endocrine factors in adaptation to physical activity.

At the end of the course the student must know:

1. the epidemiological and socio-medical importance of diabetes, the main characteristics of the different forms of diabetes, the role of physical activity in the prevention and treatment of diabetes and the metabolic syndrome, the alterations to adaptation to physical activity linked to diabetes and his therapy;
2. the consequences of the most common endocrine dysfunctions on physical performance;
3. the potential negative consequences of strenuous exercise on female reproductive function,

- the mechanisms of this phenomenon and the ways in which to counteract it;
4. the role of endocrine factors in doping and the implications of this use on the general state of health.

COURSE STRUCTURE

▪ **PEDIATRIA**

frontal lessons

Should teaching be carried out in mixed mode or remotely, it may be necessary to introduce changes with respect to previous statements, in line with the programme planned and outlined in the syllabus.

▪ **Physiology of development**

Teaching method: lectures.

Learning assessment procedures: oral examination.

If the teaching is given in a mixed or remote way, the necessary changes may be introduced from what has been stated above, in order to comply with the programme envisaged and reported in the syllabus.

DETAILED COURSE CONTENT

▪ **PEDIATRIA**

Motor and behavioural development in the first year of life

Physical examination of the newborn and child

Neurological examination

Hypotonia

Floppy infant baby

Muscular dystrophies

Neurodegenerative diseases:

Autism

Rett syndrome

Leucodystrophies

Inborn errors metabolism, Mucopolysaccharidoses

Obesity

Sport and asma

Down syndrome

Fragile X syndrome

▪ **Physiology of development**

- General anatomy and cell biology preparatory to the study of endocrinology.
- General information on endocrine regulation systems: mechanisms of hormone action; hormone receptors, feedback mechanisms, endocrine rhythms.
- Metabolic actions of thyroid hormones. Thyroid physiopathology and implications on the physical performance of thyroid pathologies.
- Diabetes mellitus: epidemiology, pathogenesis, clinical manifestations, outline of disease monitoring methods, principles of therapy. Consequences of diabetes and its various forms of therapy in adaptation to motor activity. Prescription of physical activity as a tool for prevention and treatment of diabetes mellitus.
- General relations between the endocrine system and motor activity.
- Obesity, metabolic syndrome: definition, epidemiology, implications. Role of physical activity in prevention and therapy.
- Main hormonal responses to exercise: catecholamines, cortisol, GH, glucagon, insulin, ADH.
- GH abuse in sport. The model of acromegaly.
- Mineral metabolism and metabolic bone diseases.
- Reproductive alterations of the athlete and their long-term implications.
- Adverse effects of androgens in women.
- Anabolic steroids: effects on performance and consequences on the general state of health.
- Doping: the role of endocrine factors in doping and the implications of this use on the general state of health.

TEXTBOOK INFORMATION

▪ **PEDIATRIA**

Pavone Ruggieri Neurologia Pediatrica, Masson ed

▪ **Physiology of development**

1. Greenspan's Basic and Clinical Endocrinology, Lange Medical Publications, Mc Graw Hill (Edizione italiana)
 2. William's Textbook of Endocrinology, Saunders Company, Elsevier Science (Edizione italiana)
 3. Endocrinologia e attività motorie. Lenzi A, Lombardi G, Martino E, Trimarchi F. Elsevier Masson, 2008
 4. Malattie del sistema endocrino e del metabolismo. Faglia G, Beck-Peccoz P. mcGrow Hill
-