

Section 1: Physiology of Cardiovascular response to exercise and cardiac remodelling

1.1 - Cardiovascular induced by exercise

1.1.1: Physiology of exercise, Sanjay Sharma and Andrew D'Silva

1.2 - Long term adaptation to exercise: athlete's heart and vascular adaptations

1.2.1: Structural and functional adaptations in the athlete's heart, Stefano Caselli and Antonio Pelliccia

1.2.2: Impact of sporting discipline, gender, ethnicity and genetics on the athlete's heart, Nabeel Sheikh

1.2.3: The athlete's heart in children and adolescents, Graham Stuart and Guido E Pieves

1.2.4: The vascular remodelling, Stephan Gielen, M. Harold Laughlin, and Dirk J. Duncker

Section 2: Clinical evaluation of the athlete's heart

2.1 - History and physical examination

2.1.1: History and physical examination, Maurizio Schiavon, Domenico Corrado, and Alessandro Zorzi

2.2 - The electrocardiogram in the athlete

2.2.1: The electrocardiogram in the athlete, Alessandro Zorzi and Domenico Corrado

2.2.2: Common ECG patterns of the athlete's heart, Ricardo Stein and Victor Froelicher

2.2.3: Overlap ECG patterns in athlete's heart and cardiomyopathies, Michael Papadakis and Harshil Dhutia

Section 3: Additional testing in the evaluation of the athlete's heart

3.1 - Exercise testing

3.1.1: Protocols of exercise testing in athletes and cardiopulmonary testing: assessment of the fitness, Paolo Emilio Adami and Marco Guazzi

3.1.2: Evaluation of ischemia, blood pressure, QT interval and arrhythmias, Francois Carre and Frederic Schnell

3.2 - Arrhythmias registration

3.2.1: Ambulatory (24-h Holter monitoring, event recorders) and signal-averaged ECG for arrhythmia registration in the athlete's heart, Mahdi Sareban and Josef Niebauer

3.2.2: Class-1 anti arrhythmic drug provocation test, Matthias Antz

3.2.3: Electrophysiological study, Matthias Antz

3.3 - Imaging of the athlete's heart: anatomical and functional

3.3.1: Echocardiogram: morphologic and functional evaluation including new echocardiographic techniques, Stefano Caselli and Flavio D'Ascenzi

3.3.2: Cardiac Magnetic Resonance Imaging, Guido Claessen and Andre La Gerche

3.3.3: Coronary computed tomography, Stephan Möhlenkamp

3.3.4: Nuclear imaging, Stephan Möhlenkamp

3.3.5: Coronary angiography, Stephan Möhlenkamp

3.4 - Genotyping

3.4.1: Indications for genetic testing in athletes and its application in daily practice, Silvia Priori

Section 4: Cardiac diseases of interest in sports cardiology

4.1 - Myocardial and coronary diseases

4.1.1: Hypertrophic Cardiomyopathy in Athletes, Sanjay Sharma and Aneil Malhotra

4.1.2: Arrhythmogenic Cardiomyopathy and Sudden Death in Young Athletes: Causes, Pathophysiology and Clinical features, Gaetano Thiene, Kalliopi Pilichou, and Cristina Basso

4.1.3: Myocarditis in athletes, Martin Halle

4.1.4: Differentiating Athlete's Heart from Left Ventricular Noncompaction Cardiomyopathy, Andrew D'Silva and Sanjay Sharma

4.1.5: Congenital coronary artery anomalies, Cristina Basso, Carla Frescura, and Gaetano Thiene

4.2 - Valvular and aortic disease

4.2.1: Mitral Valve Prolapse in Relation to Sport, Christian Schmied and Sanjay Sharma

4.2.2: Bicuspid Aortic Valve Disease and Competitive Sports: Key Considerations and Challenges, Natesa Pandian and Benjamin S. Wessler

4.2.3: The Athlete with Congenital Heart Disease, Guido E Pieles and A Graham Stuart

Section 5: Rhythm disorders of interest in sports cardiology

5.1: Channelopathy in Athletes, Arthur Wilde and Nicole M Panhuyzen-Goedkoop

5.2: Ventricular Tachyarrhythmias, Lluís Mont and Eduard Guasch

5.3: Supraventricular tachyarrhythmias, Mattias Wilhelm

5.4: Preexcitation and Conduction Abnormalities, Pietro Delise

Section 6: Sudden Cardiac Death in athletes

6.1: Incidence of Sudden Cardiac Death in Athletes, Jonathan Drezner and Kimberly Harmon

6.2: Cardiovascular causes of sudden death in athletes, Cristina Basso and Gaetano Thiene

6.3: The Risk, Etiology, Clinical Features, Management & Prevention of Exercise-related Sudden Cardiac Death and Acute Cardiac Events in Adult Athletes, Paul Thompson

6.4 - Less frequent causes of sudden cardiac death

6.4.1: Less frequent causes of SCD (commotio cordis, aortic rupture). Non-cardiac causes (drug abuse, hyperpyrexia, rhabdomyolysis, sickle cell anemia, asthma, extreme environmental conditions (heat, cold, altitude) PART ONE, Erik Solberg and Paolo Adami

6.4.2: Less frequent causes of SCD (commotio cordis, aortic rupture). Non-cardiac causes (drug abuse, hyperpyrexia, rhabdomyolysis, sickle cell anemia, asthma, extreme environmental conditions (heat, cold, altitude) PART TWO, Erik Solberg and Paolo Adami

6.5: Preparticipation screening of young competitive athletes, Domenico Corrado and Alessandro Zorzi

6.6: Cardiovascular screening in adult/senior competitive athletes, Luc Vanhees and Mats Borjesson

6.7: Cardiovascular screening of children and adolescent athletes, Werner Budts, Massimo Chessa, and Javier Fernandez Sarabia

Section 7: Sports eligibility in athletes with cardiac abnormalities

7.1: Criteria and considerations relative to safe sport participation in athletes with cardiac abnormalities, Antonio Pelliccia, Hein Heidbuchel, Domenico Corrado, Sanjay Sharma, and Mats Borjesson

Section 8: Exercise Prescription for cardiovascular health

8.1: Criteria and considerations relative to safe sport participation in athletes with cardiac abnormalities, Massimo Piepoli, Mats Börjesson, and Mikael Dellborg

8.2: Monitoring exercise programs and improving CV performance, Stephan Müller, Flavia Baldassarri, Julia Schönfeld, and Martin Halle

Section 9: Cardiac safety at sports facilities

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9.2: Cardiac safety at sports events: the medical action plan, Mats Börjesson, Luis Serratos, and Efraim Kramer

9.3: Cardiac safety at fitness centres, Erik Solberg, Jakob Johansson, and Alessandro Biffi

Section 10: Cardiovascular effects of substance of abuse/doping

10.1: World Anti-Doping Agency (WADA) and International Olympic Committee (IOC) list of prohibited substances and methods and their cardiovascular effects, Josef Niebauer and Carl-Johan Sundberg

10.2: Nutrition and ergogenic aids prescription for competitive athletes, Ronald Maughan and SM Shirreffs

Section 11: Hypertension in athletes

11.1: Diagnosis and management of hypertension in athletes, Stefano Caselli and Josef Niebauer