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Specialisation in sports medicine: the state of the Sport Medicine Specialty Training Core Curriculum in the European Union

Fabio Pigozzi

In Europe, participation in physical activities has been growing among people of all ages. Thus, there is an increasing demand for care relating to “sports medicine”, and this has promoted the development of specialised sports physicians. Sports medicine involves a wide range of professionals taking care of an active population of recreational and competitive athletes upon different aspects: curative, rehabilitative and preventive. In light of a higher demand of expertise and sport-specific body of knowledge—such as a further development of the “doping phenomenon”—with all the related moral, legal and health implications, the sport physician has to deal with a more complex picture. As a result, the need to provide prevention at all levels has become one of the most important objectives of sports medicine. This article aims to give a brief overview of the state of this specialty in Europe and to describe definitions, scopes and educational perspectives of the Sport Medicine Specialty Training Core Curriculum to be adopted in the European Union (EU).

HOW COUNTRIES VARY WITH RESPECT TO SPECIALISATION

Sports medicine is a multidisciplinary and interdisciplinary clinical and academic medical specialty that can also be structured as a subspecialty (or so called additional, secondary or super-specialty) following other medical specialities. In some countries, where no specialisation courses are offered, postgraduate studies (master of science (MSc) and doctor of philosophy (PhD) degrees) are provided. In order to analyse the status of the sports medicine educational activities in the European countries, the European Federation of Sports Medicine Associations (EFSMA) and the European

Olympic Committees (EOC) Medical and Scientific Commission undertook a questionnaire survey (table 1).

Sports medicine is recognised as a speciality in 21 European countries and specialisation takes between 2 and 5 years. In general, the Ministry of Health approves specialisation in those countries. Another 15 countries run subspecialty programmes, whereas six countries (Armenia, Azerbaijan, Croatia, Israel, Luxembourg and Malta) are planning full sports medicine specialisation. Furthermore, 18

Table 1 Summary of the sports medicine specialisation offered in the different countries

Country	Specialty	Subspecialty	Duration	Other types of education
Andorra	No	Yes		
Armenia	No	Yes	6 months	
Austria	No	Yes	3 years	Diploma
Azerbaijan	No	Yes	1 year	
Belarus	Yes	Yes		Yes/NS
Belgium	No	Yes	1 year	Courses
Bosnia	Yes	Yes		
Bulgaria	Yes	Yes	4 years	Diploma
Croatia	No	Yes	2 years	Diploma
Cyprus	No	No		
Czech Republic	Yes	No	5.5 years	Courses
Denmark	No	No		
Estonia	No	No		
Finland	Yes	No	5 years	
France	No	Yes		
Georgia	Yes	Yes		Certification
Germany	No	Yes	3 years	Diploma
Greece	No	No		
Hungary	No	Yes		
Iceland	No			
Ireland	No	No		MSc
Israel	No	No		Diploma/fellowship
Italy	Yes	No	5 years	
Latvia	Yes	No	4 years	
Luxembourg	No	Yes		Diploma
Macedonia	Yes			
Malta	No	No		
Moldova	No	Yes		
Monaco	No	Yes	1–2 years	Diploma
The Netherlands	Yes		4 years	Courses
Norway	No	No		Courses
Poland	No	Yes	30 months	Certification
Portugal	Yes			
Romania	Yes			
Russia	Yes	Yes	2 years	Diploma
San Marino	Yes	No		MSc
Serbia	Yes	No	3 years	
Slovakia	No	Yes	6 years	
Slovenia	Yes	No		
Spain	Yes	No	3 years	
Sweden	No	No		
Switzerland	No	Yes		
United Kingdom	Yes			Diploma/MSc
Turkey	Yes	Yes	4 years	Courses
Ukraine	Yes	No	1 year	

MSc, master of science.

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Table 2 Basic and additional knowledge provided by the curriculum

Basic knowledge/skills	Additional knowledge/skills
Preparticipation clinical screening for athletes	Primary care
Medical assistance to the athletes	Clinical anatomy
Diagnosis and treatment of injuries or illnesses caused by or affecting exercise	Nutrition and exercise
Close cooperation with other health professionals to ensure the highest level of treatment for the athletes	Exercise physiology (including energy utilisation, maximal oxygen consumption, lung function testing, isokinetic testing and force measurement)
Close collaboration within sports organisations to ensure a safe and healthy environment	Public health (including the role of exercise in cardiac diseases, respiratory disorders, osteoporosis, arthritis, hypertension, diabetes and mental health)
High level of ethical standards including anti-doping activities	Effects of illness on exercise capacity (including mental illness, acute febrile illness, epilepsy, diabetes, bleeding disorders, cancer, asthma and vasculopathic states)
Liaison with public local authorities/private sectors for each health aspect of exercise programmes	General pathology of the musculoskeletal system
Liaison with health authorities at all levels for promoting physical activity for the general population	Injury prevention and management (including the chronic/overuse injuries)
Liaison with public agencies/voluntary agencies/private sectors, involved in the provision of services to disabled people	Principles of conservative and surgical management of injuries
Regular participation in clinical audits	Joint and soft tissues injection techniques
	Musculoskeletal radiology
	Biomechanical assessment
	Physical activity in special groups (childhood, pubertal age and elderly)
	Spinal injuries, amputee rehabilitation and sport for the disabled including the knowledge of the types of prosthesis available, particularly those used for physical activities
	Muscle and nerve physiology including the understanding of the methodology and indications for electrophysiological studies

countries (including some of those mentioned above) run sports medicine courses, diploma studies and postgraduate education programmes (MSc and doctorate). With regard to the EU, 12 countries (Bulgaria, Czech Republic, Finland, Holland, Ireland, Italy, Latvia, Portugal, Romania, Slovenia, Spain and UK) accredit sports medicine as a specialty and six (Austria, Belgium, France, Germany, Hungary and Slovakia) have subspecialty programmes. Croatia, FYR of Macedonia and Turkey are EU candidate countries that already offer sports medicine specialisation programmes.¹

EUROPEAN UNION OF MEDICAL SPECIALTIES—MULTIDISCIPLINARY JOINT COMMITTEE

Based on the results of this survey, the European Union of Medical Specialties (UEMS) agreed that the EFSMA and the EOC Medical and Scientific Commission should create a Multidisciplinary Joint Committee (MJC) on sports medicine with the aim of encouraging the promotion of sports medicine education in all European countries and the full recognition of a sports medicine specialty by all relevant medical authorities.²

Furthermore, the UEMS MJC was charged with proposing a "Sport Medicine Specialty Training Core Curriculum" for European countries so that there would be consistency across nations. At a national level, the training should fulfil the requirements laid down by the country's authority and, ideally, be supplemented by those proposed by the UEMS MJC on sports medicine. Each educational proposal should be planned with the aim of allowing the specialist in sports medicine to serve in his role in the National Health Service but also specifically in his or her preferred sport setting.³⁻⁵

In this setting, applicants for this specialisation training should have completed the basic medical training and should have achieved the corresponding national basic medical degree. Training institutions must be recognised by the national authorities responsible for the training in sports medicine and should constitute one or several sport-specific facilities. Ideally, those facilities should be located so that there is easy access to them and they should ideally be near or even associated with a university hospital or a major hospital. The supervision of a relevant specialist should be ensured

during practical training and ethical issues and liability must be addressed appropriately. In addition, the head of the training programme should have at least 5 years of practising experience in the specialty of sports medicine. He or she should be a qualified specialist with a commitment to training as recognised by the relevant national authority. He or she should have documented experience in research and postgraduate education, preferably having a senior academic degree. The head of the training programme should also appoint a team of qualified specialists who can ensure that the full range of required knowledge and skills is covered.⁶

CURRICULUM

A minimum curriculum of supervised specialist training should correspond to a 4-year course structured as follows:

- ▶ 1 year of internal medicine with special emphasis on cardiology, emergency medicine and clinical nutrition
- ▶ 6–12 months of orthopaedics and traumatology
- ▶ 6–12 months of physical and rehabilitation medicine
- ▶ 12–24 months of fellowship at a recognised sports medicine centre

The curriculum should provide practical skills and essential basic, academic and clinical knowledge (table 2).

Particular attention should be paid to:

- (a) Basic knowledge of metabolic diseases encountered in children and adolescents, the principles of preparticipation screening in children (with particular emphasis on cardiology screens), diagnosis and treatment of exercise induced asthma and the application of an appropriate workload;
- (b) Differences based on gender including principles of contraception options for athletes, the relationship between pregnancy and exercise in terms of safety and performances and the postpartum return to exercise;
- (c) Research and statistics in order to be able to promote and participate in scientific research in close collaboration with academic professionals and to critically review scientific literature and apply evidence-based principles in practice;
- (d) The role of the team physician and physician-in-charge-of-events in different sport disciplines. This includes the knowledge of a wide variety of sports in terms of rules,

regulations, physiological requirements, injury-risk profiles and pre-participation screening; medical emergencies including head injury and concussion, sudden death in sport and resuscitation;

- (e) The use of drugs in sports, including the knowledge of the World Anti-Doping Agency (WADA), International Olympic Committee (IOC), national and individual sporting organisations' rules and regulations as well as the therapeutic use of drugs.

Teaching and presentation: in particular trainees are expected to develop skills to teach undergraduates, postgraduates and non-medical staff. Trainees are also expected to:

- (a) Undertake personal audit and research and present their findings at clinical and/or academic meetings;
- (b) Undertake sports medicine management including principles of effective financial accounting, planning, policy development and budgeting;

- (c) Study ethical and medicolegal aspects including laws and regulations with particular regard to confidentiality, medical records, patient consent, privacy and guidelines for dealing with minors.^{6,7}

Sports medicine is an important element of what is broadly referred to as public health; it aims to improve the health of populations. In addition, sports medical practitioners care for all people engaged in physical activities, from recreational to professional participation in sports. This includes diagnosis, treatment, prevention, rehabilitation and functional evaluation following injuries or illnesses resulting from and/or affecting the participation in physical activities. In summary, sports medicine is a clinical entity working for a specific (active, sporting and exercising) population.⁸ Better patient care and economic savings will be realised if there is coordination of the educational curriculum that must underpin this specialty. This is an essential step for providing high-quality treatment in a "globalised" area such as sports medicine.

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