



BARÇA
INNOVATION HUB
Universitas

PROFESSIONAL DIPLOMA
STRENGTH AND
CONDITIONING

100% ONLINE

9 MONTHS

LEARN FROM THE BEST | ENJOY A UNIQUE EDUCATIONAL EXPERIENCE | BECOME PART OF A GLOBAL NETWORK

INFORMATION

LEARN TO:

Improve critical analysis by completing a training program on the different professional roles of sports science and health.

Improve sports performance and injury prevention through a deepened understanding of the methodology to use in strength training and muscle power programs.

Apply the appropriate methodology to the design of the post-injury rehabilitation process in situations where strength development plays a significant role.

Have a broad understanding of the emerging methodologies of strength training in order to explore these with the benefit of a solid scientific foundation.

Get to know the fundamental characteristics for both prevention strategies and injury rehabilitation, as well as the different injury mechanisms in team sports.

Handle pathologies and specific injuries corresponding to each sport.

Use the appropriate tools to develop effective leadership in the management of groups and individuals.

Optimize acute recovery and training adaptation with nutrition.

Analyze workload monitoring data to orientate the training process towards preventing injuries and consequently successfully optimize sports performance.



DELIVERY MODE ONLINE

DURATION 9 MONTHS

ACADEMIC DEGREE EXECUTIVE EDUCATION

DELIVERED IN ENGLISH AND SPANISH

PROFESSORS



Daniel Romero Rodriguez

Physiotherapist. Physical trainer and rehabilitator of competitive high performance athletes. Performance, prevention and post-injury rehabilitation advisor for various professional football players.



Francesc Cos

Former Head of Strength Training for FC Barcelona's first team football squad (2004-2016). Former Director of the Performance area of Barça Innovation Hub (2016-2018). Currently Director of Performance of the New York City (MLS).



Gil Rodas Font

Medical Doctor and Surgeon. Specialist in Physical Education and Sports Medicine. Head of the Barça Innovation Hub Medical Service area.



Ana Merayo García

Sports Psychologist. Instructor. Coordinator of the SAIE (Service for Comprehensive Athlete Care) at Masia 360, FC Barcelona.



Asker Jeukendrup

Sports nutrition scientist. Professor of Exercise Metabolism. Performance consultant in elite sport. Entrepreneur. Ironman triathlete.



Tim Gabbett

High Performance Consultant. 20 years experience working as an applied sport scientist with athletes and coaches from a wide range of sports.

PROGRAM

1. Neuromuscular basis for strength training

MODULE 1: Characteristics of the musculoskeletal system.

Unit 1: Movement from the central nervous system.

Unit 2: Function of the skeletal muscles.

MODULE 2: Muscle action and its relationship to sports.

Unit 1: Types of muscle action.

Unit 2: Interrelationship of muscle action in movement and posture maintenance.

MODULE 3: Systemic changes in detraining and immobilisation.

Unit 1: Detraining in relation to the skeletal muscle.

Unit 2: Muscle hypertrophy.

MODULE 4: Assessment of muscular properties in relation to sport.

Unit 1: Surface electromyography.

Unit 2: Tensiomyography.

2. Strength training methodology: its application in the improvement of sports performance and post-injury rehabilitation for competition

MODULE 1: Contextualization: how can we adapt strength training to team sports?

Unit 1: Strength and its relationship to the coordination and cognitive requirements of team sports.

Unit 2: Progression in the difficulty of the strength workload in relation to the specificity of the sport.

MODULE 2: Strength workload methodology in situation sports.

Unit 1: Strength training and the need to work with overload.

Unit 2: Integrating strength workload with the other capabilities.

MODULE 3: Integrating strength workload into planning and programming of situation sports.

Unit 1: Strength in the integrated training of long-term regular league class programming. Examples based on football.

Unit 2: Strength in the integrated training of blocks of preparation – competition programming. Examples based on tennis.

MODULE 4: Strength in the design of sports specific tasks. Examples based on football.

Unit 1: Small-sided games (SSG): characteristics for their design and the relationship with the development of sports ability.

Unit 2: SSG in relation to strength workload.

PROGRAM

3. Strength and muscle power as a key feature of rehabilitation from sports injuries

MODULE 1: Analysis of injury in sports: injury mechanisms and associated risk factors.

Unit 1: Injury biomechanics and the implications of strength in the recovery of athletic skills.

Unit 2: Risk factors associated with lack of strength.

MODULE 2: Sports injuries and their relationship with the quality of strength.

Unit 1: Injuries in muscle and tendon structures.

Unit 2: Joint injuries.

MODULE 3: Strength manifestations and muscle power in the post-injury rehabilitation process.

Unit 1: Strength and its different manifestations according to external load and speed of execution.

Unit 2: Strength workload programming in sports injuries.

MODULE 4: New paradigms in strength training: muscle building through vascular occlusion.

Unit 1: Basis of traditional muscle building vs. muscle building through blood flow restriction (BFR).

Unit 2: Programming of training through blood flow restriction: key variables for optimal prescription.

4. Technology, strength training and muscle power

MODULE 1: Technology, equipment and general strength training.

Unit 1: Equipment for the general orientation workload with respect to the specific nature of sports.

Unit 2: Other equipment related to the general orientation loads.

MODULE 2: Technology, equipment and specific strength training in relation to sports.

Unit 1: Equipment for directed and specific orientation workloads related to the specific abilities of sports.

Unit 2: GPS technology and its relationship to the evaluation and control of strength in training and competition.

MODULE 3: Technology in strength and muscle power evaluation.

Unit 1: Use of lineal and rotating encoders for the evaluation of strength and muscle power.

Unit 2: Integrated systems in muscle assessment.

MODULE 4: Interactive technology and strength training.

Unit 1: Gamification in sports.

Unit 2: Interactive methodologies related to gamification.

PROGRAM

5. Injuries and Team sports

MODULE 1: Prevention of and readaptation from injuries

MODULE 2: Muscle injury and tendinitis management

MODULE 3: Management of joint and bone injury

MODULE 4: Decision making and returning to competition

6. Team Sports Pathology

MODULE 1: Management of medical pathology 1

MODULE 2: Management of medical pathology 2

MODULE 3: Sports Specific pathologies

MODULE 4: Special sports and competitions

7. Basic Coaching Skills

MODULE 1: Leadership

MODULE 2: Communicational Tools

MODULE 3: Motivational Climates

MODULE 4: Coaches and their Environment

8. Nutrition, Recovery and Training Adaptations

MODULE 1: Exercise and fatigue

MODULE 2: Recovery and adaptation

MODULE 3: Optimising recovery and adaptation

MODULE 4: Recovery from injury

9. A Best Practice Approach to Workload Monitoring

MODULE 1: Why do injuries occur?

MODULE 2: Fitness-fatigue model

MODULE 3: Acute:chronic workload ratio and injury

MODULE 4: Recent controversies, and practical applications of the data

EXPERIENCE

All your learning experience will take place in an online platform where you will find all the resources you need to study:

LECTURES

which address the main topics.

VIDEOS

that deepen some subjects of the readings.

ACTIVITIES

to apply the content addressed in each module.

RUBRICS

that will evaluate you in each module.

ONLINE EXPERT

In every course, you will have the support and virtual follow-up of a subject-matter expert. This online expert will perform interventions throughout the different modules to ensure your learning, as well as the interaction with the rest of your peers.

In addition, he will be available in the forum and by internal messaging so that you can appeal to him as many times as you need.

FORUMS

where you can interact with your colleagues.

SELF-ASSESSMENTS

which will help you measure your learning progress.

BENEFITS

World-class content, designed by experts and sports-industry oriented for an immediate impact.

Round-the-clock access to study material, wherever you want and from any device.

Custom feedback for every individual and teamwork activity.

Spaces of discussion and interaction with industry professionals from all over the world.

Certificate of participation for each course, issued by Barça Innovation Hub - Universitas. If you pass each of the courses that make up the program, and complete and pass the comprehensive final exam, you will also receive a verified certificate of completion for the entire program, with confirmation of identity, issued by Barça Innovation Hub - Universitas.



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CREATING A NEW GENERATION OF SPORTS PROFESSIONALS

