



Information about the course

Degree: Bachelor of Sciences of Physical Activity and Sport

Faculty: Faculty of Physical Activity and Sport Sciences

Code: 282049 **Name:** Theory and Practice of Training for High Performance in Sports

Credits: 6,00 ECTS **Year:** 4 **Semester:** 1

Module: 4) Optional Module.

Subject Matter: Professional Itinerary Electives **Type:** Optativa

Branch of knowledge: Health Sciences

Department: Physical Preparation and Conditioning

Type of learning: Classroom-based learning

Language/-s in which it is given: Spanish

Teachers:

OAC38	<u>Jose Marti Marti (Profesor responsable)</u>	jose.marti@ucv.es
	<u>Claudio Alberto Casal Sanjurjo</u>	ca.casal@ucv.es
	<u>Julio Martin Ruiz</u>	julio.martin@ucv.es
	<u>Helio Carratala Bellod</u>	helio.carratala@ucv.es
OAC384	<u>Jose Marti Marti (Profesor responsable)</u>	jose.marti@ucv.es
	<u>Claudio Alberto Casal Sanjurjo</u>	ca.casal@ucv.es
	<u>Julio Martin Ruiz</u>	julio.martin@ucv.es
	<u>Helio Carratala Bellod</u>	helio.carratala@ucv.es



Module organization

4) Optional Module.

Subject Matter	ECTS	Subject	ECTS	Year/semester
Inclusive Activities and Practices	4	Inclusive Activities and Practices in the Areas of Education and Leisure Time	4	4/2
Anthropology.	12	Anthropology	6	3/1
		Science, Reason and Faith	6	3/2
Collective Sports	22	Basketball	4	4/2
		Football	4	4/2
		Handball	4	4/2
		Hockey	4	4/2
		Volleyball	4	4/2
Adversary Sports	18	Fencing	4	4/2
		Judo	4	4/2
		Paddle	4	4/2
		Tennis	4	4/2
Sports in the Natural Environment	4	Sports in Nature: Specific Techniques	4	4/2
Individual sports	22	Athletics	4	4/2



Individual sports		Cycling	4	4/2
		Gymnastics	4	4/2
		Swimming	4	4/2
		Triathlon	4	4/2
Direction and Management of Gyms and Sports Centers	4	Gym and Sports Centre Management and Administration	4	4/2
Idiom	9	Inglés Avanzado para Ciencias Actividad Física y Deporte	4	4/2
		Inglés Intermedio para Ciencias Actividad Física y Deporte	4	4/2
Sports facilities	4	Sports Facilities	4	4/2
Research Methods and Techniques	4	Applied Research Methods and Techniques in Sport Sciences	4	4/2
Nutrition	4	Nutrition	4	4/2
Professional Itinerary Electives	27	Fitness and Physical Conditioning	6	4/1
		Pedagogy in Eduational Values in Sports and Physical Activity	6	4/1
		Skills, Entrepreneurship and Employment	3	4/2
		Sports Management of Human and Economic Resources	6	4/1



282049 - Theory and Practice of Training for High Performance in Sports - Year 2024/2025

Professional Itinerary Electives		Theory and Practice of Training for High Performance in Sports	6	4/1
Trends in sports practices	4	Trends in Sports Practices	4	4/2
Social Skills and Group Dynamics	4	Social Skills and Group Dynamics	4	4/2



Learning outcomes

Al finalizar la asignatura, el estudiante deberá demostrar haber adquirido los siguientes resultados de aprendizaje:

R22 - Plan and periodize the training of the different basic physical capacities (strength, endurance, range of motion and speed), complementary (Coordination, Balance, Agility and Proprioception) and Technical-Tactical in the context of high sports performance in individual, collective and adversary sports.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Deploy an advanced level in the planning, application, control and evaluation of physical and sports training processes.
 - Design and apply fluidly, naturally, consciously and continuously adequate, efficient, systematic, varied physical exercise and physical condition, based on scientific evidence, for the development of adaptation and improvement or readaptation processes of certain abilities of each person in relation to human movement and its optimization; in order to be able to solve poorly structured, increasingly complex and unpredictable problems and with emphasis on special populations.
 - Design and apply the methodological process integrated by observation, reflection, analysis, diagnosis, execution, technical-scientific evaluation and/or dissemination in different contexts and in all sectors of professional intervention in physical activity and sports.
-

R23 - Analyze, correct and optimize the conditional performance (strength, speed, resistance and range of movement) and the technique, tactics and strategy of the athlete-team (relying on different methodologies and / or technologies) in training and competition situations providing adequate feedback for the planning process.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Communicate and interact appropriately and efficiently, in physical and sports activity, in diverse intervention contexts, demonstrating teaching skills in a conscious, natural and continuous way.
-



- Deploy an advanced level in the planning, application, control and evaluation of physical and sports training processes.
- Design and apply fluidly, naturally, consciously and continuously adequate, efficient, systematic, varied physical exercise and physical condition, based on scientific evidence, for the development of adaptation and improvement or readaptation processes of certain abilities of each person in relation to human movement and its optimization; in order to be able to solve poorly structured, increasingly complex and unpredictable problems and with emphasis on special populations.
- Design and apply the methodological process integrated by observation, reflection, analysis, diagnosis, execution, technical-scientific evaluation and/or dissemination in different contexts and in all sectors of professional intervention in physical activity and sports.
- Develop theoretical-practical responses based on the sincere search for the full truth and the integration of all dimensions of the human being when faced with the great questions of life.
- Know how to readapt, retrain and/or reeducate people, groups or teams with injuries and pathologies (diagnosed and/or prescribed by a doctor), whether they compete or not, through physical-sports activities and physical exercises appropriate to their characteristics and needs.

Type of AR: Competencias

- Analyze, review and select the effect and effectiveness of the practice of research methods, techniques and resources and scientific work methodology, in solving problems that require the use of creative and innovative ideas.

R24 - Analyze and critically discriminate different sources of documentary information (in Spanish and English) on methods and / or theories, to translate it into planning / periodization oriented to high sports performance in sports individual, collective and adversary.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Design and apply fluidly, naturally, consciously and continuously adequate, efficient, systematic, varied physical exercise and physical condition, based on scientific evidence, for the development of adaptation and improvement or readaptation processes of certain abilities of each person in relation to human movement and its optimization; in order to be able to solve poorly structured, increasingly complex and unpredictable problems and with emphasis on special populations.



- Design and apply the methodological process integrated by observation, reflection, analysis, diagnosis, execution, technical-scientific evaluation and/or dissemination in different contexts and in all sectors of professional intervention in physical activity and sports.
- Develop theoretical-practical responses based on the sincere search for the full truth and the integration of all dimensions of the human being when faced with the great questions of life.

Type of AR: Competencias

- Analyze, review and select the effect and effectiveness of the practice of research methods, techniques and resources and scientific work methodology, in solving problems that require the use of creative and innovative ideas.

R25 - Select and correctly use different instruments and technologies to manage the athlete's preparation process in the context of high performance in individual, team and adversary sports.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Communicate and interact appropriately and efficiently, in physical and sports activity, in diverse intervention contexts, demonstrating teaching skills in a conscious, natural and continuous way.
- Deploy an advanced level in the planning, application, control and evaluation of physical and sports training processes.
- Design and apply fluidly, naturally, consciously and continuously adequate, efficient, systematic, varied physical exercise and physical condition, based on scientific evidence, for the development of adaptation and improvement or readaptation processes of certain abilities of each person in relation to human movement and its optimization; in order to be able to solve poorly structured, increasingly complex and unpredictable problems and with emphasis on special populations.
- Design and apply the methodological process integrated by observation, reflection, analysis, diagnosis, execution, technical-scientific evaluation and/or dissemination in different contexts and in all sectors of professional intervention in physical activity and sports.
- Develop theoretical-practical responses based on the sincere search for the full truth and the integration of all dimensions of the human being when faced with the great questions of life.
- Know how to readapt, retrain and/or reeducate people, groups or teams with injuries and pathologies (diagnosed and/or prescribed by a doctor), whether they compete or not, through physical-sports activities and physical exercises appropriate to their characteristics and needs.



- Respect and put into practice the ethical principles and action proposals derived from the objectives for sustainable development, transferring them to all academic and professional activities.

Type of AR: Competencias

- Analyze, review and select the effect and effectiveness of the practice of research methods, techniques and resources and scientific work methodology, in solving problems that require the use of creative and innovative ideas.



Assessment system

Modalidad presencial

Assessed learning outcomes	Granted percentage	Assessment tool
R22, R23, R24, R25	40,00%	Written and/or practical tests.
R22, R23, R24, R25	40,00%	Individual or Group Work / Project.
R22, R23, R24, R25	20,00%	Exercises and Practices in the Classroom.

Observations

Students may keep the assessment instruments passed during the 3 years following the first enrolment.

It is necessary to obtain 50% in all assessment instruments to pass the subject.

According to article 4.2. of the UCV Assessment Guidelines, the limit for absences that may be due to eventualities (medical consultation, bureaucratic procedures...) that do not have to be justified, is 30%.

Attendance at all the practical sessions indicated in the timetable is compulsory. Additionally for this subject, in the event of not attending 70% of these, the student will fail the two sessions of the course, having to make them up in the following enrolment.

In case of not fulfilling any of these criteria, the student will be graded with a maximum of 4.5.

SPECIFICATIONS OF THE EVALUATION INSTRUMENTS

Written and/or practical tests

This consists of a single final exam on the dates of the official exam dates (1st and/or 2nd exam).

- There will be 10 questions per block.
- One session will be used for the evaluation of the first two blocks.



·The final exam session will be used for the evaluation of the contents of the last block and the general content.

·The block assessments will be considered as the first sitting. Students who fail the first assessment will have to make it up at the second sitting.

Individual or Group Work / Project

·There will be a single group work in trios.

·The content of the group work will be chosen on the basis of a set of sports previously established by consensus of the teachers.

·An annual planning will be developed.

The work will be delivered in digital format on UCVnet, and a paper copy may also be requested (1 copy per participant/group) within the established deadlines. Failure to submit the work on time will result in the **non-evaluation** of the work.

Exercises and Practices in the Classroom

Delivery of activities, questionnaires, forums, surveys, during theoretical or practical classes, seminars and exhibitions. This grade may be penalised for 'inappropriate' behaviour in class (late arrival or early departure, lack of attention) - This instrument cannot be recovered in the following exams without having the equivalent practical assistance to this evaluation instrument.

The detailed explanation (procedure for the assignments) as well as the assessment tools (worksheets or rubrics) for each section will be posted on the platform of each group at the student's disposal.

Actividades formativas

The methodologies to be used so that the students reach the expected learning outcomes will be the following:

- | | |
|----|---|
| M2 | Resolution of problems and cases. |
| M3 | Discussion in small groups. |
| M5 | Presentation of content by the teacher. |
| M6 | Practical lesson. |



M7 Group dynamics and activities.

IN-CLASS TRAINING ACTIVITIES

ACTIVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
THEORETICAL CLASS: Presentation of contents by the teacher. Competency analysis. Demonstration of capabilities, skills and knowledge in the classroom.	R22, R23, R24	Discussion in small groups. Presentation of content by the teacher. Group dynamics and activities.	20,00	0,80
PRACTICAL CLASS / SEMINAR: Group dynamics and activities. Resolution of problems and cases. Practical laboratories. Data search, computer classroom, library, etc. Meaningful construction of knowledge through student interaction and activity.	R22, R23, R24, R25	Resolution of problems and cases. Discussion in small groups. Presentation of content by the teacher. Practical lesson. Group dynamics and activities.	34,00	1,36
EVALUATION: Set of oral and/or written tests used in the evaluation of the student, including the oral presentation of the final degree project.	R22, R23	Resolution of problems and cases. Group dynamics and activities.	4,00	0,16
TUTORING: Supervision of learning, evolution. Discussion in small groups. Resolution of problems and cases. Presentation of results before the teacher. Presentation of diagrams and indexes of the proposed works.	R22, R23, R24, R25	Discussion in small groups.	2,00	0,08



TOTAL **60,00** **2,40**

TRAINING ACTIVITIES OF AUTONOMOUS WORK

ACTIVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
GROUP WORK: Problem solving. Preparation of exercises, memoirs, to present or deliver in classes and/or in tutoring.	R22, R23, R24, R25	Resolution of problems and cases. Discussion in small groups. Group dynamics and activities.	20,00	0,80
SELF-EMPLOYED WORK: Study, Individual preparation of exercises, assignments, reports, to present or deliver in classes and/or in tutoring. Activities in platform or other virtual spaces.	R22, R23, R24	Resolution of problems and cases.	70,00	2,80
TOTAL			90,00	3,60



Description of contents

Descripción de contenidos necesarios para la adquisición de los resultados de aprendizaje.

Theoretical content:

Block of content	Contents
1. General concepts of training planning oriented to high sport performance.	General concepts of training planning oriented to high sport performance.
2. Planning of high performance oriented training for individual sports.	Planning of high performance oriented training for individual sports.
3. Planning of high performance oriented training for team sports.	Planning of high performance oriented training for team sports.
4. Planning of training oriented to the high performance of adversary sports.	Planning of training oriented to the high performance of adversary sports.

Temporary organization of learning:

Block of content	Sessions	Hours
1. General concepts of training planning oriented to high sport performance.	12	24,00
2. Planning of high performance oriented training for individual sports.	6	12,00
3. Planning of high performance oriented training for team sports.	6	12,00
4. Planning of training oriented to the high performance of adversary sports.	6	12,00



References

BASIC BIBLIOGRAPHY:

- Babul, S., Rhodes, E. C., Taunton, J. E., & Lepawsky, M. (2003). Effects of intermittent exposure to hyperbaric oxygen for the treatment of an acute soft tissue injury. *Clinical Journal of Sport Medicine: Official Journal of the Canadian Academy of Sport Medicine*, 13(3), 138–147. 10.1097/00042752-200305000-00003
- Banister, E. W., Calvert, T. W., Savage, M. V., & Bach, T. (1975). A systems model of training for athletic performance. *Aust J Sports Med*, 7(3), 57–61.?
- Barroso, G. C., & Thiele, E. S. (2011). Muscle injuries in athletes. *Revista Brasileira De Ortopedia*, 46(4), 354–358. 10.1016/S2255-4971(15)30245-7
- Bennett, M., Best, T. M., Babul, S., Taunton, J., & Lepawsky, M. (2005). Hyperbaric oxygen therapy for delayed onset muscle soreness and closed soft tissue injury. *The Cochrane Database of Systematic Reviews*, 2005(4), CD004713. 10.1002/14651858.CD004713.pub2
- Borg, G. A. (1982). Psychophysical bases of perceived exertion. *Medicine and Science in Sports and Exercise*, 14(5), 377–381.
- Borresen, J., & Lambert, M. I. (2008). Autonomic control of heart rate during and after exercise : Measurements and implications for monitoring training status. *Sports Medicine (Auckland, N.Z.)*, 38(8), 633–646. 10.2165/00007256-200838080-00002?
- Cancela, J., Pariente, S., Camiña, F., & Lorenzo, R. (2008). Tratado de natación: Del perfeccionamiento al alto rendimiento. *Paidotribo*
- Canda, A. S., Castiblanco, L. A., Toro, A. N., Amestoy, J. A., & Higuera, S. (2014). Características morfológicas del triatleta según sexo, categoría y nivel competitivo. *Apunts.Medicina De L'Esport*, 49(183), 75–84.
- Charpy, S., Billard, P., Dandrieux, P., Chapon, J., & Edouard, P. (2023). Epidemiology of injuries in elite women's artistic gymnastics: A retrospective analysis of six seasons. *BMJ Open Sport & Exercise Medicine*, 9(4), e001721. 10.1136/bmjsem-2023-001721
- Chulvi-Medrano, I., Picón-Martínez, M., Cortell-Tormo, J. M., Tortosa-Martínez, J., Alonso-Aubin, D. A., & Alakhdar, Y. (2020). Different time course of recovery in achilles tendon thickness after low-load resistance training with and without blood flow restriction. *Journal of Sport Rehabilitation*, 30(2), 300–305. 10.1123/jsr.2019-0403
- CSD. (2024). *Tecnificación nacional*. CSD - Consejo Superior de Deportes. Retrieved Jun 25, 2024, from <https://www.csd.gob.es/es/promocion-del-deporte/programa-nacional-de-tecnificacion-deportiva/tecnificacion-nacional>
- Dopsaj, M., Zuoziene, I. J., Milic, R., Cherepov, E., Erlikh, V., Masiulis, N., di Nino, A., & Vodigar, J. (2020). Body composition in international sprint swimmers: Are there any relations with performance? *International Journal of Environmental Research and Public Health*, 17(24), 9464. 10.3390/ijerph17249464
- FIG.FIG - search events (sport). Federation Internationales de Gymnastique. Retrieved Jun 12,



2024, from <https://www.gymnastics.sport/site/events/search.php?type=sport>

Friel, J. (2018). *La biblia del triatleta (bicolor)*. Paidotribo.

Geßlein, M., Rüter, J., Millrose, M., Bail, H. J., Martin, R., & Schuster, P. (2021). High incidence of hand injuries from blocking in elite taekwondo despite the use of protective gear: A 5-year descriptive epidemiology study. *Orthopaedic Journal of Sports Medicine*, 9(1), 2325967120973996. 10.1177/2325967120973996

González-Badillo, J. J., Rodríguez Rosell, D., Sánchez Medina, L., & Pareja Blanco, F. (2017). *La velocidad de ejecución como referencia para la programación, control y evaluación del entrenamiento de fuerza*. Ergotech.

Haugen, T., Seiler, S., Sandbakk, Ø, & Tønnessen, E. (2019). The training and development of elite sprint performance: An integration of scientific and best practice literature. *Sports Medicine - Open*, 5(1), 44. 10.1186/s40798-019-0221-0

Issurin, V. (2019). *Entrenamiento deportivo: Periodización en bloques*. Paidotribo.

Jakše, B., Jakše, B., Cuk, I., & Šajber, D. (2021). Body composition, training volume/pattern and injury status of slovenian adolescent female high-performance gymnasts. *International Journal of Environmental Research and Public Health*, 18(4), 2019. 10.3390/ijerph18042019

Joyce, D., & Lewindon, D. (2023). *Entrenamiento de alto rendimiento aplicado a los deportes*. Tutor.

Lagally, K. M., & Robertson, R. J. (2006). Construct validity of the OMNI resistance exercise scale. *Journal of Strength and Conditioning Research*, 20(2), 252–256. 10.1519/R-17224.1

Lange, B., Halkin, A. S., & Bury, T. (2005). [Physiologic requirements of high level gymnastics]. *Revue Medicale De Liege*, 60(12), 939–945.

Lepers, R. (2019). Sex difference in triathlon performance. *Frontiers in Physiology*, 10, 973. 10.3389/fphys.2019.00973

Lucía, A., Pardo, J., Duránte, A., Hoyos, J., & Chicharro, J. L. (1998). Physiological differences between professional and elite road cyclists. *International Journal of Sports Medicine*, 19(5), 342–348. 10.1055/s-2007-971928

Magistrali, M., Stefanini, L., Abate, M., Biancalana, G., Stegagno, A., Cugia, P., Candoli, P., Anania, G., Lucchese, P. L., Gaddi, D., Volpi, P., Mariani, F., Boldrini, L., Filippi, N., Cerrone, A., Sirtori, C., Battaglino, P., Bravin, G., Del Fabro, E., . . . Minetto, M. A. (2024). Epidemiology of non-contact muscle injuries in the italian male elite under-19 football (soccer) championship. *Sports Medicine - Open*, 10(1), 75. 10.1186/s40798-024-00738-0

Matveev, L. P. (2001). *Teoría general del entrenamiento deportivo*. Editorial Paidotribo.

Melin, A. K., Heikura, I. A., Tenforde, A., & Mountjoy, M. (2019). Energy availability in athletics: Health, performance, and physique. *International Journal of Sport Nutrition and Exercise Metabolism*, 29(2), 152–164. 10.1123/ijsnem.2018-0201

Miller, R., Balshaw, T. G., Massey, G. J., Maeo, S., Lanza, M. B., Haug, B., Johnston, M., Allen, S. J., & Folland, J. P. (2022). The muscle morphology of elite female sprint running. *Medicine and Science in Sports and Exercise*, 54(12), 2138–2148. 10.1249/MSS.0000000000002999

Miller, R., Balshaw, T. G., Massey, G. J., Maeo, S., Lanza, M. B., Haug, B., Johnston, M., Allen, S. J., & Folland, J. P. (2024). Sex differences in muscle morphology between male and female



- sprinters. *Journal of Applied Physiology (Bethesda, Md.: 1985)*, 136(6), 1568–1579. 10.1152/jappphysiol.00009.2023
- Miller, R., Balshaw, T. G., Massey, G. J., Maeo, S., Lanza, M. B., Johnston, M., Allen, S. J., & Folland, J. P. (2021). The muscle morphology of elite sprint running. *Medicine and Science in Sports and Exercise*, 53(4), 804–815. 10.1249/MSS.0000000000002522
- Moro, T., Tinsley, G., Longo, G., Grigoletto, D., Bianco, A., Ferraris, C., Guglielmetti, M., Veneto, A., Tagliabue, A., Marcolin, G., & Paoli, A. (2020). Time-restricted eating effects on performance, immune function, and body composition in elite cyclists: A randomized controlled trial. *Journal of the International Society of Sports Nutrition*, 17(1), 65. 10.1186/s12970-020-00396-z
- Navarro, F., Oca Gala, A., & Rivas Feal, A. (2010). *Planificación del entrenamiento y su control*. Cultiva Libros SL.
- Pallarés, J. G., Hernández-Belmonte, A., Martínez-Cava, A., Vetrovsky, T., Steffl, M., & Courel-Ibáñez, J. (2021). Effects of range of motion on resistance training adaptations: A systematic review and meta-analysis. *Scandinavian Journal of Medicine & Science in Sports*, 31(10), 1866–1881. 10.1111/sms.14006
- Pan, Q., Zhu, R., Qiu, J., & Cai, G. (2023). Construction of an anthropometric discriminant model for identification of elite swimmers: An adaptive lasso approach. *PeerJ*, 11, e14635. 10.7717/peerj.14635
- Randell, R. K., Rollo, I., Roberts, T. J., Dalrymple, K. J., Jeukendrup, A. E., & Carter, J. M. (2017). Maximal fat oxidation rates in an athletic population. *Medicine and Science in Sports and Exercise*, 49(1), 133–140. 10.1249/MSS.0000000000001084
- Ruff, J., Taeymans, J., Blasimann, A., & Rogan, S. (2024). Analysis of injuries in the swiss U20 elite ice hockey season 2019/2020-A retrospective survey. *Sports (Basel, Switzerland)*, 12(4), 88. 10.3390/sports12040088
- Ruiz Omeñaca, J. V. (2012). Nuevas perspectivas para una orientación educativa del deporte. CCS,?
- San Emeterio, C., Cochrane, D., Guillén-Rogel, P., & Marín, P. J. (2022). Short-term effects of lumbopelvic complex stability training in elite female road cyclists. *Journal of Musculoskeletal & Neuronal Interactions*, 22(1), 62–69.
- Sanders, D., & van Erp, T. (2021). The physical demands and power profile of professional men's cycling races: An updated review. *International Journal of Sports Physiology and Performance*, 16(1), 3–12. 10.1123/ijsp.2020-0508
- Schärer, C., Huber, S., Bucher, P., Capelli, C., & Hübner, K. (2021). Maximum strength benchmarks for difficult static elements on rings in male elite gymnastics. *Sports (Basel, Switzerland)*, 9(6), 78. 10.3390/sports9060078
- Sebastiani, E. M. (1995). La enseñanza de los deportes individuales. modelos de intervención pedagógica. *La Iniciación Deportiva Y El Deporte Escolar*, , 312–331.
- Seiler, K. S., & Kjerland, G. Ø. (2006). Quantifying training intensity distribution in elite endurance athletes: Is there evidence for an "optimal" distribution? *Scandinavian Journal of Medicine & Science in Sports*, 16(1), 49–56. 10.1111/j.1600-0838.2004.00418.x
- Triathlon, W.Events. World Triathlon. Retrieved Jun 12, 2024,



from <https://www.triathlon.org/events/past>

Turner, A. N., Comfort, P., McMahon, J., Bishop, C., Chavda, S., Read, P., Mundy, P., & Lake, J. (2020). Developing powerful athletes, part 1: Mechanical underpinnings. *Strength & Conditioning Journal*, 42(3), 30–39.

UCI. *Calendar*. UCI. Retrieved Jun 12, 2024,

from <https://www.uci.org/calendar/all/2jnxYAuvjgtyHi6YQ94EJ>

Uth, N. (2005). Anthropometric comparison of world-class sprinters and normal populations. *Journal of Sports Science & Medicine*, 4(4), 608–616.

Vicente-Campos, D., Martín López, A., Nuñez, M. J., & López Chicharro, J. (2014). Heart rate recovery normality data recorded in response to a maximal exercise test in physically active men. *European Journal of Applied Physiology*, 114(6), 1123–1128.

10.1007/s00421-014-2847-4

WA. (a, *Events calendar* | *world athletics*. World athletics. Retrieved Jun 12, 2024,

from <https://worldathletics.org/competition/calendar-results?>

WA. (b, *World aquatics*. World Aquatics. Retrieved Jun 12, 2024,

from www.worldaquatics.com/competitions

Zintl, F. (1991). *Entrenamiento de la resistencia*. Martínez Roca.

Ørtenblad, N., Zachariassen, M., Nielsen, J., & Gejl, K. D. (2024). Substrate utilization and durability during prolonged intermittent exercise in elite road cyclists. *European Journal of Applied Physiology*, 124(7), 2193–2205. 10.1007/s00421-024-05437-y