

PUBLICATIONS ET PRODUCTIONS SCIENTIFIQUES

A. Articles publiés dans des revues internationales à comité de lecture

60. I Sachet, NP Brochner Nygaard, G Guilhem, F Hug, **S Dorel**. Strength capacity of lower-limb muscles in world-class cyclists: new insights into the limits of sprint cycling performance. *Sports Biomech.* (2021, in press).
59. M Robin, A Nordez, **S Dorel**. Analysis of elite road-cycling sprints in relation to maximal power-velocity-endurance profile: a longitudinal one-case study. *Scand J Med Sci Sports.* (2021) Nov 20.
58. C Thomas, R Delfour-Peyrethon, **S Dorel**, C Hanon. Positive Effects of Pre-exercise Metabolic Alkalosis on Perceived Exertion and Post-exercise Squat Jump Performance in World-Class Cyclists. *J Strength Cond Res.* (2021) Mar 2.
57. M Alhammoud, S Racinais, **S Dorel**, G Guilhem, CA Hautier, B Morel. Muscle-tendon unit length changes in knee extensors and flexors during alpine skiing. *Sports Biomech.* (2021) Feb 21:1-12.
56. R Hager, T Poulard, A Nordez, **S Dorel**, G Guilhem. Influence of joint angle on muscle fascicle dynamics and rate of torque development during isometric explosive contractions. *J Appl Physiol (1985).* (2020) Sep 1;129(3):569-579
55. C Granier, C Hausswirth, **S Dorel**, Y Le Meur. Validity And Reliability Of The Stages Cycling Power Meter. *Journal of Strength & Conditioning Research.* (2020) Dec;34(12):3554-3559
54. F Hug, C Vogel, K Tucker, **S Dorel**, T Deschamps, É Le Carpentier, L Lacourpaille. Individuals have unique muscle activation signatures as revealed during gait and pedaling. *J Appl Physiol.* (2019) Oct 1;127(4):1165-1174
53. Y Le Mansec, **S Dorel**, A Nordez, M Jubeau. Is reaction time altered by mental or physical exertion? *Eur J Appl Physiol.* (2019) Jun;119(6):1323-1335.
52. M Crouzier, F Hug, **S Dorel**, T Deschamps, K Tucker, L Lacourpaille. Do individual differences in the distribution of activation between synergist muscles reflect individual strategies? *Exp Brain Res* (2019); 237(3):625-635.
51. R Hager, **S Dorel**, A Nordez, G Rabita, A Couturier, H Hauraix, J Duchateau, G Guilhem. The slack test does not assess maximal shortening velocity of muscle fascicle in human. *J Exp Biol.* (2018) Aug 10;221(Pt 15):jeb169623.
50. C Granier, CR Abbiss, A Aubry, Y Vauchez, **S Dorel**, C Hausswirth, Y Le Meur. Power Output and Pacing During International Cross-Country Mountain Bike Cycling. *Int J Sports Physiol Perform.* (2018) Oct 1;13(9):1243-1249
49. NP Brøchner Nielsen, F Hug, A Guével, F Colloud, J Lardy, **S Dorel**. Changes in Motor Coordination Induced by Local Fatigue during a Sprint Cycling Task. *Med Sci Sports Exerc.* (2018). Jul;50(7):1394-1404
48. Y Le Mansec, B Pageaux, A Nordez, **S Dorel**, M Jubeau. Mental fatigue alters the speed and the accuracy of the ball in table tennis. *J Sports Sci.* (2018). Dec;36(23):2751-2759

47. N. Beaumatin, H Hauraix, A Nordez, R Hager, G Rabita, G Guilhem, **S Dorel**. Maximal shortening velocity during plantar flexion: Effects of pre-activity and initial stretching state. *Scand J Med Sci Sports*. (2018) Apr;28(4):1361-1370.
46. Y Le Mansec, **S Dorel**, F Hug, M Jubeau. Lower limb muscle activity during table tennis strokes. *Sports Biomechanics*. (2017) Sep 12:1-11.
45. Y Le Mansec, A Nordez, **S Dorel**, M Jubeau. Reaction time can be measured during voluntary contractions with electrode array. *Clinical Physiology and Functional Imaging*. (2017)
44. H Hauraix, **S Dorel**, G Rabita, G Guilhem, A Nordez. Muscle fascicle shortening behaviour of vastus lateralis during a maximal force-velocity test. *European Journal of Applied Physiology*. (2017) Feb;117(2):289-299.
43. NP Brøchner Nielsen, F Hug, A Guével, V Fohanno, J Lardy, **S Dorel**. Motor adaptations to unilateral quadriceps fatigue during a bilateral pedaling task. *Scandinavian Journal of Medicine & Science in Sports*. (2017) Dec;27(12):1724-1738.
42. NP Brøchner Nielsen, K Tucker, **S Dorel**, A Guével, F Hug. Motor adaptations to local muscle pain during a bilateral cyclic task. *Experimental Brain Research*. (2017) Feb;235(2):607-614.
41. NP Brøchner Nielsen, K Tucker, **S Dorel**, A Guével, F Hug. Motor adaptations to local muscle pain during a bilateral cyclic task. *Experimental Brain Research*. (2017) Feb;235(2):607-614.
40. J Slawinski, N Termoz, G Rabita, G Guilhem, **S Dorel**, JB Morin, P Samozino. How 100-m event analyses improve our understanding of world-class men's and women's sprint performance. *Scandinavian Journal of Medicine & Science in Sports*. (2017) Jan;27(1):45-54
39. V Doguet, M Jubeau, **S Dorel**, A Couturier, L Lacourpaille, A Guével, G Guilhem. Time-Course of Neuromuscular Changes during and after Maximal Eccentric Contractions. *Frontiers in Physiology*. (2016) Apr 18;7:137.
38. Y Le Mansec, **S Dorel**, A Nordez, M Jubeau. Sensitivity and Reliability of a Specific Test of Stroke Performance in Table Tennis. *Int J Sports Physiol Perform*. (2016) 11(7):678-84.
37. G Guilhem, V Doguet, H Hauraix, L Lacourpaille, M Jubeau, A Nordez, **S Dorel**. Muscle force loss and soreness subsequent to maximal eccentric contractions depend on the amount of fascicle strain in vivo. *Acta Physiol (Oxf)*. (2016) Jun;217(2):152-63.
36. C Thomas, R Delfour-Peyrethon, DJ Bishop, S Perrey, PM Leprêtre, **S Dorel**, C Hanon. Effects of pre-exercise alkalosis on the decrease in [Formula: see text] at the end of all-out exercise. *European Journal of Applied Physiology*. (2016) Jan;116(1):85-95
35. P Samozino, G Rabita, **S Dorel**, J Slawinski, N Peyrot, E Saez de Villarreal, J.-B Morin. A simple method for measuring power, force, velocity properties, and mechanical effectiveness in sprint running. (2015) *Scandinavian Journal of Medicine & Science in Sports*. (2016) Jun;26(6):648-58
34. H Hauraix, A Nordez, G Guilhem, G Rabita, **S Dorel**. In vivo Maximal fascicle shortening velocity during plantar flexion in human. *Journal of Applied Physiology*. (2015) Dec 1;119(11):1262-71

33. JB Morin, J Slawinski, **S Dorel**, ES de Villareal, A Couturier, P Samozino, M Brughelli, G Rabita. Acceleration capability in elite sprinters and ground impulse: Push more, brake less? *Journal of Biomechanics*. (2015) 48(12):3149-54
32. H Hauraix, A Fouré, **S Dorel**, C Cornu, A Nordez. Muscle and tendon stiffness assessment using the alpha method and ultrafast ultrasound (in press) *European Journal of Applied Physiology*. (2015) 115(7):1393-400
31. G Rabita, **S Dorel**, J Slawinski, E Sàez-de-Villarreal, A Couturier, P Samozino, J-B Morin. Sprint mechanics in world-class athletes: A new insight into the limits of human locomotion. *Scandinavian Journal of Medicine & Science in Sports*. 2015 25(5):583-94
30. S Farcy, A Nordez, **S Dorel**, H Hauraix, P Portero, G Rabita. Interaction between gastrocnemius medialis fascicle and Achilles tendon compliance: a new insight on the quick-release method. *Journal of Applied Physiology*. (2014) 116(3):259-66
29. G Guilhem, F Hug, A Couturier, S Regnault, L Bournat, JR Filliard, **S Dorel**. Effects of air-pulsed cryotherapy on neuromuscular recovery subsequent to exercise-induced muscle damage. *American Journal of Sports Medicine*. (2013) 41(8):1942-51
28. H Hauraix, A Nordez, **S Dorel**. Shortening behavior of the different components of muscle-tendon unit during isokinetic plantar flexions. *Journal of Applied Physiology*. (2013) 115(7):1015-24
27. C Hanon, **S Dorel**, R Delfour-Peyrethon, P-M Leprêtre, D J Bishop, S Perrey, C Thomas. Prevalence of cardio-respiratory factors in the occurrence of the decrease in oxygen uptake during supra-maximal, constant-power exercise. *SpringerPlus*. (2013) 2:651
26. F Hug, F Boumier, **S Dorel**. Altered muscle coordination when pedaling with independent cranks. *Frontiers in Physiology*. (2013) Aug 28;4:232
25. G Rabita, A Couturier, **S Dorel**, C Hauswirth, Y Le Meur. Changes in spring-mass behavior and muscle activity during an exhaustive run at VO₂max. *Journal of Biomechanics*. (2013) 46(12):2011-7
24. Y Le Meur, T Bernard, G Rabita, **S Dorel**, G Honnorat, J Brisswalter and C Hauswirth. Spring-Mass Behaviour during the Run of an International Triathlon Competition. *International Journal of Sport Medicine* (2013) 34(8):748-55
23. **S Dorel**, G Guilhem, A Couturier and F Hug. Adjustment of muscle coordination during an all-out sprint cycling task. *Medicine and Science in Sports and Exercise* (2012) 44(11): 2154-64
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21. F Hug, NA Turpin, **S Dorel** and A Guevel. Smoothing of electromyographic signals can influence the number of extracted muscle synergies. *Clinical Neurophysiology* (2012) 123(9): 1895-6
20. Y Le Meur, **S Dorel**, Y Baup, JP Guyomarch, C Roudaut and C Hauswirth. Physiological demand and pacing strategy during the new combined event in elite pentathletes. *European Journal of Applied Physiology* (2012) 112(7) :2583-93

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17. F Hug, NA Turpin, A Guevel and **S Dorel**. Is interindividual variability of EMG patterns in trained cyclists related to different muscle synergies? *Journal of Applied Physiology* (2010) 108(6): 1727-36
16. M Bourdin, O Rambaud, , **S Dorel**, J-R Lacour, B Moyen and A Rahmani. Throwing performance is associated with muscular power. *International Journal of Sport Medicine* (2010) 31(7):505-10
15. **S Dorel**, A Couturier, J-R Lacour, H Vandewalle, CA Hautier and F Hug. Force-Velocity Relationship in Cycling Revisited: Benefit of Two-Dimensional Pedal Forces Analysis. *Medicine and Science in Sports and Exercise* (2010) 42(6):1174-83
14. Y Le Meur, C Hausswirth, C Abbiss, Y Baup and **S Dorel**. Performance factors in the new combined event of modern pentathlon. *Journal of Sports Science* (2010) 28(10):1111-6
13. **S Dorel**, J-M Drouet, Y Champoux, A Couturier and F Hug. Changes of pedaling technique and muscle coordination during an exhaustive exercise. *Medicine and Science in Sports and Exercise* (2009) 41(6): 1277-86 (Cat A, 1e, IF= 4.431)
12. T Bernard, C Hausswirth, Y Lemeur, F Bignet, **S Dorel** and J Brisswalter. Distribution of power output during the cycling stage of a triathlon world cup. *Medicine and Science in Sports and Exercise* (2009) 41(6):1296-302
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10. G Guilhem, **S Dorel** and F Hug. Effects of a prior short simulated training session on the subsequent ventilatory thresholds determination. *Journal of Science and Medicine in Sport* (2009) 12(2):273-9
9. F Hug and **S Dorel**. Electromyographic analysis of pedaling: A review. *Journal of electromyography and kinesiology* (2009) 19(2):182-98
8. J-M Drouet, Y Champoux and **S Dorel**. Development of multi-platform instrumented force pedals for track cycling. *The Engineering of Sport 7* (2008) Ed. Springer, ISBN-13: 689-694
7. J Slawinski, **S Dorel**, F Hug, A Couturier, V Fournel, J-B Morin and C Hanon. Elite long sprint running: a comparison between incline and level training sessions. *Medicine and Science in Sports and Exercise* (2008) 40(6): 1155-62
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5. F Hug, J-M Drouet, Y Champoux, A Couturier and **S Dorel**. Inter-individual variability of EMG patterns and pedal forces profiles in trained cyclists. *European Journal of Applied Physiology* (2008) 104(4): 667-78

4. **S Dorel**, A Couturier and F Hug. Influence of different racing positions on mechanical and electromyographic patterns during pedalling Scandinavian Journal of Medicine and Sciences in Sport (2008) 19(1): 44-54
3. **S Dorel**, CA Hautier, O Rambaud, D Rouffet, E Van Praagh, J-R Lacour and M Bourdin. "Torque and Power-Velocity relationships in cycling: relevance to track sprint performance in world-class cyclists International Journal of Sport Medicine (2005) 26: 739-746
2. **S Dorel**, M Bourdin, E Van Praagh, J-R Lacour and CA Hautier. Influence of two pedalling rate conditions on mechanical output and physiological responses during all-out intermittent exercise. European Journal of Applied Physiology (2003) 89: 157-165
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B. Chapitres d'ouvrage

8. **S Dorel**. Mechanical Effectiveness and Coordination: New Insights into Sprint Cycling Performance : Biomechanics of Training and Testing (Coordonnateurs : JB Morin, P Samozino) - Springer International Publishing - 2018
7. **S Dorel**. Maximal Force- and Power-Velocity Characteristics in Cycling: Assessment and Relevance. Titre de l'ouvrage : Biomechanics of Training and Testing (Coordonnateurs : JB Morin, P Samozino) - Springer International Publishing - 2018
6. S Duc et **S Dorel**. Mesure de l'activité musculaire par électromyographie. Titre de l'ouvrage : Métrologie en biomécanique (Coordonnateurs A Arfaoui, W Bertucci, Instrumentation Mesure Métrologie) - Edition Lavoisier - 2014
5. **S Dorel**, G Guilhem. Les applications thermiques locales en médecine sportive. Titre de l'ouvrage : Améliorer sa récupération en sport (Coordonateur: C. Hausswirth) - Edition INSEP – 2013
4. **S Dorel**, G Guilhem. Local Thermal Applications. Titre de l'ouvrage: Recovery for performance in sport. (Coordonnateurs: C Hausswirth, I Mujika) - Human kinetics – 2013
3. **S Dorel**, C Lucas et L Martinez Pacheco. Applications thermiques locales. Titre de l'ouvrage : Récupération et performance sportive (Coordonateur: C. Hausswirth) - Edition INSEP – 2010
2. C Hanon et **S Dorel**, F Hug. Analyse du mouvement et performance de haut niveau. In F. Hug (Ed), Le mouvement. Paris : Editions revue EPS. 2009.
1. **S Dorel**. Approche biomécanique du mouvement. In F. Hug (Ed), Le mouvement. Paris : Editions revue EPS. 2009.

D. Rapports de recherche et articles de vulgarisation (uniquement en auteur principal)

5. **S. Dorel**. Contribution articulaires et rôle des différents groupes musculaires à la production de puissance maximale en sprint en cyclisme – perspectives d'optimisation de la performance de haut-niveau Étude des coordinations lors du geste de pédalage en sprint dans une population de cyclistes de niveau international.

Rapport du Projet de Recherche n° 10-R-019- Avril 2014 (Ministère des Sports). Rapport du Projet de Recherche n° 14-R-23- Juin 2020 (Ministère des Sports).

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3. **S. Dorel**. Étude des coordinations lors du geste de pédalage en sprint dans une population de cyclistes de niveau international. Rapport du Projet de Recherche n° 10-R-019- Avril 2014 (Ministère des Sports).

2. C Hausswirth, **S.Dorel**, Y. Le Meur. Étude des effets de la fatigue sur la performance lors d'une épreuve combinée de course et de tir au pistolet à 10 mètres: influence de la variabilité des allures de course. Rapport du Projet de Recherche 2009 (Ministère des Sports).

1. **S. Dorel**, F. Hug. Évolution des paramètres électromyographiques et mécaniques au cours d'une épreuve rectangulaire de pédalage menée jusqu'à épuisement. Rapport du Projet de Recherche n° 06-046 - Septembre 2008 (Ministère des Sports).