

1. Aagaard P, Andersen JL, Dyhre-Poulsen P, Leffers AM, Wagner A, Magnusson SP, Halk jaе rKristensen J, and Simonsen EB. A mechanism for increased contractile strength of human pennate muscle in response to strength training: changes in muscle architecture. *J Physiol* 534:613-623, 2001.
2. Ackland DC, Lin YC, and Pandy MG. Sensitivity of model predictions of muscle function to changes in moment arms and muscle-tendon properties: a Monte-Carlo analysis. *J Biomech* 45: 1463-1471, 2012.
3. Arnold EM, Hamner SR, Seth A, Millard M, and Delp SL. How muscle fiber lengths and velocities affect muscle force generation as humans walk and run at different speeds. *J Exp Biol* 216:2150-2160, 2013.
4. Askew GN and Marsh RL. Optimal shortening velocity (V/V_{max}) of skeletal muscle during cyclical contractions: length-force effects and velocity-dependent activation and deactivation. *J Exp Biol* 201: 1527-1540, 1998.
5. Avogadro P, Chaux C, Bourdin M, Dalleau G, and Belli A. The use of treadmill ergometers for extensive calculation of external work and leg stiffness during running. *Eur J Appl Physiol* 92: 182-185, 2004.
6. Azizi E, Brainerd EL, and Roberts TJ. Variable gearing in pennate muscles. *Proc Natl Acad Sci U S A* 105: 1745-1750, 2008
7. Barclay CJ, Woledge RC, and Curtin NA. Inferring crossbridge properties from skeletal muscle energetics. *Prog Biophys Mol Biol* 102: 53-71, 2010.
8. Baxter JR and Piazza SJ. Plantar flexor moment arm and muscle volume predict torque-generating capacity in young men. *J Appl Physiol* 116: 538-544, 2014.
9. Belli A, Kyrolainen H, and Komi PV. Moment and power of lower limb joints in running. *Int J Sports Med* 23: 136-141, 2002.
10. Biewener AA. Locomotion as an emergent property of muscle contractile dynamics. *J Exp Biol* 219: 285-294, 2016.
11. Bloemink MJ, Melkani GC, Bernstein SI, and Geeves MA. The relay/converter interface influences hydrolysis of ATP by skeletal muscle myosin II. *J Biol Chem* 291: 1763-1773, 2016.
12. Bottinelli R, Pellegrino MA, Canepari M, Rossi R, and Reggiani C. Specific contributions of various muscle fibre types to human muscle performance: an in vitro study. *J Electromyogr Kinesiol* 9: 87-95, 1999.
13. Brainerd EL and Azizi E. Muscle fiber angle, segment bulging and architectural gear ratio in segmented musculature. *J Exp Biol* 208: 3249-3261, 2005.
14. Burghardt TP, Hu JY, and Ajtai K. Myosin dynamics on the millisecond time scale. *Biophys Chem* 131: 15-28, 2007.
15. Cannon DT, Bimson WE, Hampson SA, Bowen TS, Murgatroyd SR, Marwood S, Kemp GJ, and Rossiter HB. Skeletal muscle ATP turnover by ³¹P magnetic resonance spectroscopy during moderate and heavy bilateral knee extension. *J Physiol* 592: 5287-5300, 2014.
16. Cavagna GA, Legramandi MA, and La Torre A. Running backwards: soft landing-hard takeoff, a less efficient rebound. *Proc Biol Sci* 278: 339-346, 2011.
17. Cavagna GA, Legramandi MA, and Peyre-Tartaruga LA. Old men running: mechanical work and elastic bounce. *Proc Biol Sci* 275: 411-418, 2008.
18. Cavagna GA, Zamboni A, Faraggiana T, and Margaria R. Jumping on the moon: power output at different gravity values. *Aerosp Med* 43: 408-414, 1972.
19. Coggan AR. Use of stable isotopes to study carbohydrate and fat metabolism at the whole-body level. *Proc Nutr Soc* 58: 953-961, 1999.
20. Cormie P, McBride JM, and McCaulley GO. Power-time, force-time, and velocity-time curve analysis during the jump squat: impact of load. *J Appl Biomech* 24: 112-120, 2008.
21. Cormie P, McCaulley GO, and McBride JM. Power versus strength-power jump squat training: influence on the load-power relationship. *Med Sci Sports Exerc* 39: 996-1003, 2007.
22. Cormie P, McCaulley GO, Triplett NT, and McBride JM. Optimal loading for maximal power output during lower-body resistance exercises. *Med Sci Sports Exerc* 39: 340-349, 2007.
23. Cornachione AS, Leite F, Bagni MA, and Rassier DE. The increase in non-cross-bridge forces after stretch of activated striated muscle is related to titin isoforms. *Am J Physiol Cell Physiol* 310:C19-26, 2016.
24. Croce R, Miller J, Chamberlin K, Filipovic D, and Smith W. Wavelet analysis of quadriceps power spectra and amplitude under varying levels of contraction intensity and velocity. *Muscle Nerve* 50: 844-853, 2014.
25. Davies CT and Young K. Effects of external loading on short term power output in children and young male adults. *Eur J Appl Physiol Occup Physiol* 52: 351-354, 1984.
26. Deschenes MR, Judelson DA, Kraemer WJ, Meskaitis VJ, Volek JS, Nindl BC, Harman FS, and Deaver DR. Effects of resistance training on neuromuscular junction morphology. *Muscle Nerve* 23: 1576-1581, 2000.
27. Desmedt JE and Godaux E. Ballistic contractions in man: characteristic recruitment pattern of single motor units of the tibialis anterior muscle. *J Physiol* 264: 673-693, 1977.
28. di Prampero PE and Ferretti G. The energetics of anaerobic muscle metabolism: a reappraisal of older and recent concepts. *Respir Physiol* 118: 103-115, 1999.
29. Diederichs F. From cycling between coupled reactions to the cross-bridge cycle: mechanical power output as an integral part of energy metabolism. *Metabolites* 2: 667-700, 2012.
30. Domire ZJ and Challis JH. Maximum height and minimum time vertical jumping. *J Biomech* 48: 2865-2870, 2015.
31. Findley T, Chaudhry H, and Dhar S. Transmission of muscle force to fascia during exercise. *J Bodyw Mov Ther* 19: 119-123, 2015.
32. Finni T, Ikegawa S, Lepola V, and Komi PV. Comparison of force-velocity relationships of vastus lateralis muscle in isokinetic and in stretch-shortening cycle exercises. *Acta Physiol Scand* 177:483-491, 2003.
33. Fischer G, Storniolio JL, and Eyre-Tartaruga LA. Effects of fatigue on running mechanics: spring mass behavior in recreational runners after 60 seconds of countermovement jumps. *J Appl Biomech* 31: 445-451, 2015.
34. Fitts RH, McDonald KS, and Schluter JM. The determinants of skeletal muscle force and power: their adaptability with changes in activity pattern. *J Biomech* 24 Suppl 1: 111-122, 1991.
35. Fitts RH and Widrick JJ. Muscle mechanics: adaptations with exercise-training. *Exerc Sport Sci Rev* 24: 427-473, 1996.
36. Gastin PB. Energy system interaction and relative contribution during maximal exercise. *SportsMed* 31: 725-741, 2001.
37. Giroux C, Rabita G, Chollet D, and Guilhem G. Optimal balance between force and velocity differs among world-class athletes. *J Appl Biomech* 32: 59-68, 2016.

38. Glancy B, Barstow T, and Willis WT. Linear relation between time constant of oxygen uptake kinetics, total creatine, and mitochondrial content in vitro. *Am J Physiol Cell Physiol* 294: C79-87, 2008.
39. Grahammer J. A review of power output studies of Olympic and powerlifting: methodology, performance prediction, and evaluation tests. *J Strength Cond Res* 7: 76-89, 1993.
40. Hamner SR and Delp SL. Muscle contributions to fore-aft and vertical body mass center accelerations over a range of running speeds. *J Biomech* 46: 780-787, 2013.
41. Harridge SD, Bottinelli R, Canepari M, Pellegrino M, Reggiani C, Esbjornsson M, Balsom PD, and Saltin B. Sprint training, in vitro and in vivo muscle function, and myosin heavy chain expression. *J Appl Physiol* 84: 442-449, 1998.
42. Harridge SD, Bottinelli R, Canepari M, Pellegrino MA, Reggiani C, Esbjornsson M, and Saltin B. Whole-muscle and single-fibre contractile properties and myosin heavy chain isoforms in humans. *Pflügers Arch* 432: 913-920, 1996.
43. Hashizume S, Iwanuma S, Akagi R, Kanehisa H, Kawakami Y, and Yanai T. The contraction-induced increase in Achilles tendon moment arm: a three-dimensional study. *J Biomech* 47: 3226-3231, 2014.
44. Hawley JA and Leckey JJ. Carbohydrate dependence during prolonged, intense endurance exercise. *Sports Med* 45 Suppl 1: 5-12, 2015.
45. Heise GD, Smith JD, and Martin PE. Lower extremity mechanical work during stance phase of running partially explains inter-individual variability of metabolic power. *Eur J Appl Physiol* 111: 1777-1785, 2011.
46. Herbert RD, Moseley AM, Butler JE, and Gandevia SC. Change in length of relaxed muscle fascicles and tendons with knee and ankle movement in humans. *J Physiol* 539: 637-645, 2002.
47. Hintzy F, Mourrot L, Perrey S, and Tordi N. Effect of endurance training on different mechanical efficiency indices during submaximal cycling in subjects unaccustomed to cycling. *Can J Appl Physiol* 30: 520-528, 2005.
48. Hori N, Newton RU, Andrews WA, Kawamori N, McGuigan MR, and Nosaka K. Comparison of four different methods to measure power output during the hang power clean and the weighted jump squat. *J Strength Cond Res* 21: 314-320, 2007.
49. Hunter SK, Thompson MW, Ruell GA, Harner AR, Thom JM, Gwinn TH, and Adams RD. Human skeletal sarcoplasmic reticulum Ca²⁺ uptake and muscle function with aging and strength training. *J Appl Physiol* 86: 1858-1865, 1999.
50. Jimenez-Reyes P, Samozino P, Cuadrado-Penafiel V, Conceicao F, Gonzalez-Badillo JJ, and Morin JB. Effect of countermovement on power-force-velocity profile. *Eur J Appl Physiol* 114: 2281-2288, 2014.
51. Karatzaferi C, Chinn MK, and Cooke R. The force exerted by a muscle cross-bridge depends directly on the strength of the actomyosin bond. *Biophys J* 87: 2532-2544, 2004.
52. Kipp K, Harris C, and Sabick MB. Correlations between internal and external power outputs during weightlifting exercise. *J Strength Cond Res* 27: 1025-1030, 2013.
53. Kitamura K, Tokunaga M, Iwane AH, and Yanagida T. A single myosin head moves along an actin filament with regular steps of 5.3 nanometres. *Nature* 397: 129-134, 1999.
54. Krylow AM and Sandercock TG. Dynamic force responses of muscle involving eccentric contraction. *J Biomech* 30: 27-33, 1997.
55. Kyrolainen H and Komi PV. Differences in mechanical efficiency between power- and endurance-trained athletes while jumping. *Eur J Appl Physiol Occup Physiol* 70: 36-44, 1995.
56. Kyrolainen H, Komi PV, and Belli A. Mechanical efficiency in athletes during running. *Scand J Med Sci Sports* 5: 200-208, 1995.
57. Loturco I, Kobal R, Maldonado T, Piazzini AF, Bottino A, Kitamura K, Abad CC, Pereira LA, and Nakamura FY. Jump squat is more related to sprinting and jumping abilities than Olympic push press. *Int J Sports Med* 2015. [e-pub ahead of print].
58. Loturco I, Nakamura FY, Artioli GG, Kobal R, Kitamura K, Cal Abad CC, Cruz IF, Romano F, Pereira LA, and Franchini E. Strength and power qualities are highly associated with punching impact in elite amateur boxers. *J Strength Cond Res* 30: 109-116, 2016.
59. Luhtanen P and Komi PV. Mechanical energy states during running. *Eur J Appl Physiol Occup Physiol* 38: 41-48, 1978.
60. Luhtanen P and Komi PV. Force-, power-, and elasticity-velocity relationships in walking, running, and jumping. *Eur J Appl Physiol Occup Physiol* 44: 279-289, 1980.
61. Mansson A, Rassier D, and Tsiavaliaris G. Poorly understood aspects of striated muscle contraction. *Biomed Res Int* 2015: 245154, 2015. cal output in maximum vertical jumping. *Med Sci Sports Exerc* 39: 1757-1764, 2007.
63. Martin PE, Heise GD, and Morgan DW. Interrelationships between mechanical power, energy transfers, and walking and running economy. *Med Sci Sports Exerc* 25: 508-515, 1993.
64. McBride JM, Haines TL, and Kirby TJ. Effect of loading on peak power of the bar, body, and system during power cleans, squats, and jump squats. *J Sports Sci* 29: 1215-1221, 2011.
65. McBride JM and Snyder JG. Mechanical efficiency and force-time curve variation during repetitive jumping in trained and untrained jumpers. *Eur J Appl Physiol* 112: 3469-3477, 2012.
66. Methenitis SK, Zaras ND, Spengos KM, Stasinaki AN, Karampatsos GP, Georgiadis GV, and Terzis GD. Role of muscle morphology in jumping, sprinting, and throwing performance in participants with different power training duration experience. *J Strength Cond Res* 30: 807-817, 2016.
67. Miller MS, Bedrin NG, Ades PA, Palmer BM, and Toth MJ. Molecular determinants of force production in human skeletal muscle fibers: effects of myosin isoform expression and cross-sectional area. *Am J Physiol Cell Physiol* 308: C473-484, 2015.
68. Miller MS, Bedrin NG, Callahan DM, Previs MJ, Jennings ME 2nd, Ades PA, Maughan DW, Palmer BM, and Toth MJ. Age-related slowing of myosin actin cross-bridge kinetics is sex specific and predicts decrements in whole skeletal muscle performance in humans. *J Appl Physiol* 115: 1004-1014, 2013.
69. Morel B, Rouffet DM, Saboul D, Rota S, Clemençon M, and Hautier CA. Peak torque and rate of torque development influence on repeated maximal exercise performance: contractile and neural contributions. *PLoS one* 10: e0119719, 2015.
70. Nardello F, Ardigo LP, and Minetti AE. Measured and predicted mechanical internal work in human locomotion. *Hum Mov Sci* 30: 90-104, 2011.
71. Nuzzo JL, McBride JM, Dayne AM, Israetel MA, Dumke CL, and Triplett NT. Testing of the maximal dynamic output hypothesis in trained and untrained subjects. *J Strength Cond Res* 24: 1269-1276, 2010.
72. O'Brien TD, Reeves ND, Baltzopoulos V, Jones DA, and Maganaris CN. Strong relationships exist between muscle volume, joint power and whole-body external mechanical power in adults and children. *Exp Physiol* 94: 731-738, 2009.
73. Plas RL, Degens H, Meijer JP, de Wit GM, Philippens IH, Bobbert MF, and Jaspers RT. Muscle contractile properties as an expla-

- nation of the higher mean power output in marmosets than humans during jumping. *J Exp Biol* 218: 2166-2173, 2015.
74. Prosser U and Allen TJ. Damage to skeletal muscle from eccentric exercise. *Exerc Sport Sci Rev* 33: 98-104, 2005.
 75. Rassier DE, MacIntosh BR, and Herzog W. Length dependence of active force production in skeletal muscle. *J Appl Physiol* 86: 1445-1457, 1999.
 76. Rubenson J, Lloyd DG, Heliamis DB, Besier TF, and Fournier PA. Adaptations for economical bipedal running: the effect of limb structure on three-dimensional joint mechanics. *J R Soc Interface* 8: 740-755, 2011.
 77. Sasaki K, Neptune RR, and Kautz SA. The relationships between muscle, external, internal and joint mechanical work during normal walking. *J Exp Biol* 212: 738-744, 2009.
 78. Schache AG, Brown NA, and Pandy MG. Modulation of work and power by the human lower-limb joints with increasing steady-state locomotion speed. *J Exp Biol* 218: 2472-2481, 2015.
 79. Scott CB. Contribution of blood lactate to the energy expenditure of weight training. *J Strength Cond Res* 20: 404-411, 2006.
 80. Seebacher F, Tallis JA, and James RS. The cost of muscle power production: muscle oxygen consumption per unit work increases at low temperatures in *Xenopus laevis*. *J Exp Biol* 217: 1940-1945, 2014.
 81. Shen ZH and Seipel JE. A fundamental mechanism of legged locomotion with hip torque and leg damping. *Bioinspir Biomim* 7:046010, 2012.
 82. Smith DA. A new mechanokinetic model for muscle contraction, where force and movement are triggered by phosphate release. *J Muscle Res Cell Motil* 35: 295-306, 2014.
 83. Snow DH, Harris RC, and Gash SP. Metabolic response of equine muscle to intermittent maximal exercise. *J Appl Physiol* 58: 1689-1697, 1985.
 84. Sogaard K, Gandevia SC, Todd G, Petersen NT, and Taylor JL. The effect of sustained low-intensity contractions on supraspinal fatigue in human elbow flexor muscles. *J Physiol* 573: 511-523, 2006.
 85. Soriano MA, Jimenez-Reyes P, Rhea MR, and Marin PJ. The optimal load for maximal power production during lower-body resistance exercises: a meta-analysis. *Sports Med* 45: 1191-1205, 2015.
 86. Suzuki M, Fujita H, and Ishiwata S. A new muscle contractile system composed of a thick filament lattice and a single actin filament. *Biophys J* 89: 321-328, 2005.
 87. Taboga P, Lazzar S, Fessehatsion R, Agošti F, Sartorio A, and di Prampero PE. Energetics and mechanics of running men: the influence of body mass. *Eur J Appl Physiol* 112: 4027-4033, 2012.
 88. Toji H and Kaneko M. Effect of multiple-load training on the force-velocity relationship. *J Strength Cond Res* 18: 792-795, 2004.
 89. Toji H, Suei K, and Kaneko M. Effects of combined training loads on relations among force, velocity, and power development. *Can J Appl Physiol* 22: 328-336, 1997.
 90. Trappe S, Godard M, Gallagher P, Carroll C, Rowden G, and Porter D. Resistance training improves single muscle fiber contractile function in older women. *Am J Physiol Cell Physiol* 281: C398-406, 2001.
 91. Van Cutsem M, Duchateau J, and Hainaut K. Changes in single motor unit behaviour contribute to the increase in contraction speed after dynamic training in humans. *J Physiol* 513 (Pt 1): 295-305, 1998.
 92. Waterman-Storer CM. The cytoskeleton of skeletal muscle: is it affected by exercise? A brief review. *Med Sci Sports Exerc* 23: 1240-1249, 1991.
 93. Willems PA, Cavagna GA, and Heglund NC. External, internal and total work in human locomotion. *J Exp Biol* 198: 379-393, 1995.
 94. Williams PE and Goldspink G. Longitudinal growth of striated muscle fibres. *J Cell Sci* 9: 751-767, 1971.
 95. Willis WT, Jackman MR, Messer JI, Kuzmiak-Glancy S, and Glancy B. A simple hydraulic analog model of oxidative phosphorylation. *Med Sci Sports Exerc* 48: 990-1000, 2016.

Chapter 2

1. Baker D and Newton RU. Methods to increase the effectiveness of maximal power training for the upper body. *Strength Cond J* 27: 24-32, 2005.
2. Bosco C, Luhtanen P, and Komi PV. A simple method for measurement of mechanical power in jumping. *Eur J Appl Physiol* 50: 273-282, 1983.
3. Chia M and Aziz AR. Modelling maximal oxygen uptake in athletes: allometric scaling versus ratio-scaling in relation to body mass. *Ann Acad Med Singapore* 37: 300-306, 2008.
4. Cormack SJ, Newton RU, McGuigan MR, and Doyle TLA. Reliability of measures obtained during single and repeated countermovement jumps. *Int J Sports Physiol Perform* 3: 131-144, 2008.
5. Cormie P, McBride JM, and McCaulley GO. Validation of power measurement technique in dynamic lower body resistance exercises. *J Appl Biomech* 23: 103-118, 2007.
6. Cormie P, McBride JM, and McCaulley GO. Power-time, force-time, and velocity-time curve analysis of the countermovement jump: impact of training. *J Strength Cond Res* 23: 177, 2009.
7. Cormie P, McCaulley GO, Triplett NT, and McBride JM. Optimal loading for maximal power output during lower-body resistance exercises. *Med Sci Sports Exerc* 39: 340-349, 2007.
8. Crewther BT, Kilduff LP, Cunningham DJ, Cook C, Owen N, and Yang GZ. Validating two systems for estimating force and power. *Int J Sports Med* 32: 254-258, 2011.
9. Crewther BT, McGuigan MR, and Gill ND. The ratio and allometric scaling of speed, power, and strength in elite male rugby union players. *J Strength Cond Res* 25: 1968-1975, 2011.
10. Cronin J and Sleivert G. Challenges in understanding the influence of maximal power training on improving athletic performance. *Sports Med* 35: 213-234, 2005.
11. Dugan EL, Doyle TL, Humphries B, Hasson CJ, and Newton RU. Determining the optimal load for jump squats: a review of methods and calculations. *J Strength Cond Res* 18: 668-674, 2004.
12. Fox, EL and Mathews, DK. *Interval Training: Conditioning for Sports and General Fitness*. Philadelphia, PA: Saunders, 1974. pp. 257-258.
13. Garhammer J. A review of power output studies of Olympic and powerlifting: methodology, performance prediction, and evalu-

- ation tests. *J Strength Cond Res* 7: 76-89, 1993.
14. Haff GG and Nimphius S. Training principles for power. *Strength Cond J* 34: 2-12, 2012.
 15. Harman E, Rosenstein MT, Frykman PN, Rosenstein RM, and Kraemer WJ. Estimation of human power output from vertical jump. *J Appl Sport Sci Res* 5: 116-120, 1991.
 16. Hopkins WG. How to interpret changes in an athletic performance test. *Sportscience* 8: 1-7, 2004.
 17. Hopkins WG, Schabert EJ, and Hawley JA. Reliability of power in physical performance tests. *Sports Med* 31: 211-234, 2001.
 18. Hori N, Newton RU, Andrews WA, Kawamori N, McGuigan MR, and Nosaka K. Comparison of four different methods to measure power output during the hang power clean and the weighted jump squat. *J Strength Cond Res* 21: 314-320, 2007.
 19. Hori N, Newton RU, Kawamori N, McGuigan MR, Kraemer WJ, and Nosaka K. Reliability of performance measurements derived from ground reaction force data during countermovement jump and the influence of sampling frequency. *J Strength Cond Res* 23: 874-882, 2009.
 20. Hori N, Newton RU, Nosaka K, and McGuigan MR. Comparison of different methods of determining power output in weightlifting exercises. *Strength Cond J* 28: 34-40, 2006.
 21. Jaric S. Role of body size in the relation between muscle strength and movement performance. *Exerc Sport Sci Rev* 31: 8-12, 2003.
 22. Knudson DV. Correcting the use of the term "power" in the strength and conditioning literature. *J Strength Cond Res* 23: 1902-1908, 2009.
 23. McLellan CP, Lovell DI, and Gass GC. The role of rate of force development on vertical jump performance. *J Strength Cond Res* 25: 379-385, 2011.
 24. McMaster DT, Gill N, Cronin J, and McGuigan M. A brief review of strength and ballistic assessment methodologies in sport. *Sports Med* 44: 603-623, 2014.
 25. Moir GL, Gollie JM, Davis SE, Guers JJ, and Witmer CA. The effects of load on system and lowerbody joint kinetics during jump squats. *Sports Biomech* 11: 492-506, 2012.
 26. Nevill AM, Stewart AD, Olds T, and Holder R. Are adult physiques geometrically similar? The dangers of allometric scaling using body mass power laws. *Am J Phys Anthropol* 124: 177-182, 2004.
 27. Nimphius S, McGuigan MR, and Newton RU. Relationship between strength, power, speed, and change of direction performance of female softball players. *J Strength Cond Res* 24: 885-895, 2010.
 28. Nimphius S, McGuigan MR, and Newton RU. Changes in muscle architecture and performance during a competitive season in female softball players. *J Strength Cond Res* 26: 2655-2666, 2012.
 29. Nuzzo JL, McBride JM, Cormie P, and McCaulley GO. Relationship between countermovement jump performance and multi-joint isometric and dynamic tests of strength. *J Strength Cond Res* 22: 699-707, 2008.
 30. Sayers SP, Harackiewicz DV, Harman EA, Frykman PN, and Rosenstein MT. Cross-validation of three jump power equations. *Med Sci Sports Exerc* 31: 572-577, 1999.
 31. Stone MH, Stone M, and Sands WA. Testing, Measurement, and Evaluation, in: *Principles and Practices of Resistance Training*. Champaign, IL: Human Kinetics, 2007, pp 157-179.
 32. Suchomel TJ, Nimphius S, and Stone MH. The importance of muscular strength in athletic performance. *Sports Med* 46: 1419-1449, 2016.
 33. Tessier JF, Basset FA, Simoneau M, and Teasdale N. Lower-limb power cannot be estimated accurately from vertical jump tests. *J Hum Kinet* 38: 5-13, 2013.
 34. Vanderburgh PM, Sharp M, and Nindl B. Nonparallel slopes using analysis of covariance for body size adjustment may reflect inappropriate modeling. *Meas Phys Educ Exerc Sci* 2: 127-135, 1998.
 35. Wilson GJ, Newton RU, Murphy AJ, and Humphries BJ. The optimal training load for the development of dynamic athletic performance. *Med Sci Sports Exerc* 25: 1279-1286, 1993.
 36. Winter EM, Abt G, Brookes FB, Challis JH, Fowler NE, Knudson DV, Knuttgen HG, Kraemer WJ, Lane AM, van Mechelen W, Morton RH, Newton RU, Williams C, and Yeadon MR. Misuse of "power" and other mechanical terms in sport and exercise science research. *J Strength Cond Res* 30: 292-300, 2016.
 37. Zoeller RF, Ryan ED, Gordish-Dressman H, Price TB, Seip RL, Angelopoulos TJ, Moyna NM, Gordon PM, Thompson PD, and Hoffman EP. Allometric scaling of isometric biceps strength in adult females and the effect of body mass index. *Eur J Appl Physiol* 104: 701-710, 2008.

Chapter 3

1. Aagaard P, Simonsen EB, Andersen JL, Magnusson P, and Dyhre-Poulsen P. Increased rate of force development and neural drive of human skeletal muscle following resistance training. *J Appl Physiol* 93: 1318-1326, 2002.
2. Aagaard P, Simonsen EB, Andersen JL, Magnusson P, and Dyhre-Poulsen P. Neural adaptation to resistance training: changes in evoked V-wave and H-reflex responses. *J Appl Physiol* 92: 2309-2318, 2002.
3. Aagaard P, Simonsen EB, Trolle M, Bangsbo J, and Klausen K. Effects of different strength training regimes on moment and power generation during dynamic knee extensions. *Eur J Appl Physiol* 69: 382-386, 1994.
4. Baker D. Comparison of upper-body strength and power between professional and college-aged rugby league players. *J Strength Cond Res* 15: 30-35, 2001.
5. Baker D. A series of studies on the training of high-intensity muscle power in rugby league football players. *J Strength Cond Res* 15: 198-209, 2001.
6. Baker D, Wilson G, and Carlyon R. Periodization: the effect on strength of manipulating volume and intensity. *J Strength Cond Res* 8: 235-242, 1994.
7. Baništer EW, Carter JB, and Zarkadas PC. Training theory and taper: validation in triathlon athletes. *Eur J Appl Physiol Occup Physiol* 79: 182-191, 1999.
8. Barker M, Wyatt TJ, Johnson RL, Stone MH, O'Bryant HS, Poe C, and Kent M. Performance factors, physiological assessment, physical characteristic, and football playing ability. *J Strength Cond Res* 7: 224-233, 1993.
9. Bartolomei S, Hoffman JR, Mermi F, and Stout JR. A comparison of traditional and block periodized strength training programs in

- trained athletes. *J Strength Cond Res* 28: 990-997, 2014.
10. Bompa TO and Buzzichelli CA. Periodization as planning and programming of sport training, in: *Periodization Training for Sports*. Champaign, IL: Human Kinetics, 2015, pp 87-98
 11. Bompa TO and Haff GG. *Periodization: Theory and Methodology of Training*. Champaign, IL: Human Kinetics Publishers, 2009.
 12. Bondarchuk A. *Transfer of Training in Sports*. Michigan, USA: Ultimate Athlete Concepts, 2007.
 13. Bondarchuk AP. Track and field training. *Legkaya Atletika* 12: 8-9, 1986.
 14. Bondarchuk AP. Constructing a Training System. *Track Tech* 102: 254-269, 1988.
 15. Bondarchuk AP. The role and sequence of using different training-load intensities. *Fit Sports Rev Inter* 29: 202-204, 1994.
 16. Bosquet L, Montpetit J, Arvisais D, and Mujika I. Effects of tapering on performance: a metaanalysis. *Med Sci Sports Exerc* 39: 1358-1365, 2007.
 17. Bruin G, Kuipers H, Keizer HA, and Vander Vusse GJ. Adaptation and overtraining in horses subjected to increasing training loads. *J Appl Physiol* 76: 1908-1913, 1994.
 18. Chiu LZ and Barnes JL. The fitness-fatigue model revisited: implications for planning short and long-term training. *NSCA J* 25: 42-51, 2003.
 19. Cormie P, McGuigan MR, and Newton RU. Adaptations in athletic performance following ballistic power vs strength training. *Med Sci Sports Exerc* 42: 1582-1598, 2010.
 20. Cormie P, McGuigan MR, and Newton RU. Influence of strength on magnitude and mechanisms of adaptation to power training. *Med Sci Sports Exerc* 42: 1566-1581, 2010.
 21. Cormie P, McGuigan MR, and Newton RU. Developing maximal neuromuscular power. Part II: training considerations for improving maximal power production. *Sports Med* 41: 125-146, 2011.
 22. Counsilman JE and Counsilman BE. *The New Science of Swimming*. Englewood Cliffs, NJ: Prentice Hall, 1994.
 23. Edington DW and Edgerton VR. *The Biology of Physical Activity*. Boston, MA: Houghton Mifflin, 1976.
 24. Fleck S and Kraemer WJ. *Designing Resistance Training Programs*. Champaign, IL: Human Kinetics, 2004.
 25. Fleck SJ and Kraemer WJ. *The Ultimate Training System: Periodization Breakthrough*. New York, NY: Advanced Research Press, 1996.
 26. Foster C. Monitoring training in athletes with reference to overtraining syndrome. *Med Sci Sports Exerc* 30: 1164-1168, 1998.
 27. Francis C. *Structure of Training for Speed*. charliefrancis.com, 2008, p 270.
 28. Fry AC. The role of training intensity in resistance exercise overtraining and overreaching, in: *Overtraining in Sport*. RB Kreider, AC Fry, ML O'Toole, eds. Champaign, IL: Human Kinetics Publishers, 1998, pp 107-127.
 29. Garcia-Pallares J, Garcia-Fernandez M, Sanchez-Medina L, and Izquierdo M. Performance changes in world-class kayakers following two different training periodization models. *Eur J Appl Physiol* 110: 99-107, 2010.
 30. Gorostiaga EM, Navarro-Amezqueta I, Calbet JA, Hellsten Y, Cusso R, Guerrero M, Granados C, Gonzalez-Izal M, Ibanez J, and Izquierdo M. Energy metabolism during repeated sets of leg press exercise leading to failure or not. *PLoS One* 7: e40621, 2012
 31. Gourgoulis V, Aggeloussis N, Kasimatis P, Mavromatis G, and Garas A. Effect of a submaximal half-squats warm-up program on vertical jumping ability. *J Strength Cond Res* 17: 342-344, 2003.
 32. Haff GG. Periodization of training. In *Conditioning for Strength and Human Performance*. LE Brown, J Chandler, eds. Philadelphia, PA: Wolters Kluwer, Lippincott, Williams & Wilkins, 2012, pp 326-345.
 33. Haff GG. Peaking for competition in individual sports, in: *High-Performance Training for Sports*. D Joyce, D Lewindon, eds., Champaign, IL: Human Kinetics, 2014, pp 524-540.
 34. Haff GG. Periodization strategies for youth development, in: *Strength and Conditioning for Young Athletes: Science and Application*. RS Lloyd, JL Oliver, eds. London: Routledge, Taylor & Francis Group, 2014, pp 149-168.
 35. Haff GG, Burgess S, and Stone MH. Cluster training: theoretical and practical applications for the strength and conditioning professional. *Prof Strength and Cond* 12: 12-17, 2008.
 36. Haff GG, Carlock JM, Hartman MJ, Kilgore JL, Kawamori N, Jackson JR, Morris RT, Sands WA, and Stone MH. Force-time curve characteristics of dynamic and isometric muscle actions of elite women Olympic weightlifters. *J Strength Cond Res* 19: 741-748, 2005.
 37. Haff GG and Haff EE. Resistance training program design, in: *Essentials of Periodization*. MH Malek, JW Coburn, eds. Champaign, IL: Human Kinetics, 2012, pp 359-401.
 38. Haff GG and Haff EE. Training integration and periodization. In *Strength and Conditioning Program Design*. J Hoffman, ed. Champaign, IL: Human Kinetics, 2012, pp 209-254.
 39. Haff GG, Hobbs RT, Haff EE, Sands WA, Pierce KC, and Stone MH. Cluster training: a novel method for introducing training program variation. *Strength Cond J* 30: 67-76, 2008
 40. Haff GG and Nimphius S. Training principles for power. *Strength Cond J* 34: 2-12, 2012.
 41. Haff GG, Ruben RP, Lider J, Twine C, and Cormie P. A comparison of methods for determining the rate of force development during isometric midhigh clean pulls. *J Strength Cond Res* 29: 386-395, 2015.
 42. Haff GG, Stone MH, O'Bryant HS, Harman E, Dinan CN, Johnson R, and Han KH. Force-time dependent characteristics of dynamic and isometric muscle actions. *J Strength Cond Res* 11: 269- 272, 1997.
 43. Haff GG, Whitley A, and Potteiger JA. A brief review: explosive exercises and sports performance. *Natl Strength Cond Assoc* 23: 13-20, 2001.
 44. Hardee JP, Travis Triplett N, Utter AC, Zwetsloot KA, and McBride JM. Effect of interrepetition rest on power output in the power clean. *J Strength Cond Res* 26: 883-889, 2012.
 45. Harre D. *Principles of Sports Training*. Berlin, Germany: Democratic Republic: Sportverlag, 1982.
 46. Harris GR, Stone MH, O'Bryant HS, Proulx CM, and Johnson RL. Short-term performance effects of high power, high force, or combined weight-training methods. *J Strength Cond Res* 14: 14-20, 2000.
 47. Harris NK, Cronin JB, Hopkins WG, and Hansen KT. Squat jump training at maximal power loads vs. heavy loads: effect on sprint ability. *J Strength Cond Res* 22: 1742-1749, 2008.
 48. Issurin V. Block periodization versus traditional training theory: a review. *J Sports Med Phys Fitness* 48: 65-75, 2008.
 49. Issurin V. *Block Periodization: Breakthrough in Sports Training*. Michigan, USA: Ultimate Athlete Concepts, 2008.
 50. Issurin VB. New horizons for the methodology and physiology of training periodization. *Sports Med* 40: 189-206, 2010.

51. Izquierdo M, Ibanez J, Gonzalez-Badillo JJ, Ratamess NA, Kraemer WJ, Häkkinen K, Bonnabau H, Granados C, French DN, and Gorostiaga EM. Detraining and tapering effects on hormonal responses and strength performance. *J Strength Cond Res* 21: 768-775, 2007.
52. Jeffreys I. Quadrennial planning for the high school athlete. *Strength Cond J* 30: 74-83, 2008.
53. Jovanović M. Planning the strength training. *Complementary Training, Contemporary Training*, 2009. <http://complementarytraining.net/planning-the-strength-training-part-1/>. Accessed February 9, 2017.
54. Kaneko M, Fuchimoto T, Toji H, and Suei K. Training effect of different loads on the force-velocity relationship and mechanical power output in human muscle. *Scand J Sports Sci* 5: 50-55, 1983.
55. Kawamori N and Haff GG. The optimal training load for the development of muscular power. *J Strength Cond Res* 18: 675-684, 2004.
56. Keiner M, Sander A, Wirth K, Caruso O, Immesberger P, and Zawieja M. Strength performance in youth: trainability of adolescents and children in the back and front squats. *J Strength Cond Res* 27: 357-362, 2013.
57. Kirby TJ, Erickson T, and McBride JM. Model for progression of strength, power, and speed training. *Strength Cond J* 32: 86-90 2010.
58. Knudson DV. Correcting the use of the term “power” in the strength and conditioning literature. *J Strength Cond Res* 23: 1902-1908, 2009.
59. Kraemer WJ and Fleck SJ. *Optimizing Strength Training: Designing Nonlinear Periodization Workouts*. Champaign, IL: Human Kinetics, 2007.
60. Kraemer WJ, Hatfield DL, and Fleck SJ. Types of muscle training, in: *Strength Training*. LE Brown, ed. Champaign, IL: Human Kinetics, 2007, pp 45-72.
61. Kurz T. *Science of Sports Training*. Island Pond, VT: Stadion Publishing Co., Inc., 2001.
62. Lovell DI, Cuneo R, and Gass GC. The effect of strength training and short-term detraining on maximum force and the rate of force development of older men. *Eur J Appl Physiol Occup Physiol* 109: 429-435, 2010.
63. Matveyev L. *Periodization of Sports Training*. Moskow, Russia: Fizkultura i Sport, 1965.
64. Matveyev LP. *Periodisierung Des Sportlichen Trainings*. Moscow: Fizkultura i Sport, 1972.
65. Matveyev LP. *Fundamentals of Sports Training*. Moscow: Fizkultura i Sport, 1977.
66. McBride JM, Nimphius S, and Erickson TM. The acute effects of heavy-load squats and loaded countermovement jumps on sprint performance. *J Strength Cond Res* 19: 893-897, 2005.
67. McBride JM, Triplett-McBride T, Davie A, and Newton RU. A comparison of strength and power characteristics between power lifters, Olympic lifters, and sprinters. *J Strength Cond Res* 13: 58-66, 1999.
68. McBride JM, Triplett-McBride T, Davie A, and Newton RU. The effect of heavy- vs. light-load jump squats on the development of strength, power, and speed. *J Strength Cond Res* 16: 75-82, 2002.
69. Minetti AE. On the mechanical power of joint extensions as affected by the change in muscle force (or cross-sectional area), ceteris paribus. *Eur J Appl Physiol* 86: 363-369, 2002.
70. Moss BM, Refsnes PE, Abildgaard A, Nicolaysen K, and Jensen J. Effects of maximal effort strength training with different loads on dynamic strength, cross-sectional area, load-power and load-velocity relationships. *Eur J Appl Physiol* 75: 193-199, 1997.
71. Mujika I and Padilla S. Detraining: loss of training-induced physiological and performance adaptations. Part I: short term insufficient training stimulus. *Sports Med* 30: 79-87, 2000.
72. Mujika I and Padilla S. Detraining: loss of training-induced physiological and performance adaptations. Part II: long term insufficient training stimulus. *Sports Med* 30: 145-154, 2000.
73. Mujika I and Padilla S. Scientific bases for precompetition tapering strategies. *Med Sci Sports Exerc* 35: 1182-1187, 2003.
74. Nádori L and Granek I. *Theoretical and Methodological Basis of Training Planning With Special Considerations Within a Microcycle*. Lincoln, NE: NSCA, 1989.
75. Newton RU and Kraemer WJ. Developing explosive muscular power: implications for a mixed methods training strategy. *Strength Cond J* 16: 20-31, 1994.
76. Olbrecht J. *The Science of Winning: Planning, Periodizing, and Optimizing Swim Training*. Luton, England: Swimshop, 2000.
77. Painter KB, Haff GG, Ramsey MW, McBride J, Triplett T, Sands WA, Lamont HS, Stone ME, and Stone MH. Strength gains: block versus daily undulating periodization weight-training among track and field athletes. *Int J Sports Physiol Perform* 7: 161-169, 2012.
78. Plisk SS and Stone MH. Periodization strategies. *Strength and Cond* 25: 19-37, 2003.
79. Rhea MR, Ball SD, Phillips WT, and Burkett LN. A comparison of linear and daily undulating periodized programs with equated volume and intensity for strength. *Strength Cond J* 16: 250- 255, 2002.
80. Roll F and Omer J. Football: Tulane football winter program. *Strength Cond J* 9: 34-38, 1987.
81. Rowbottom DG. Periodization of training, in: *Exercise and Sport Science*. WE Garrett, DT Kirkendall, eds. Philadelphia, PA: Lippincott Williams and Wilkins, 2000, pp 499-512.
82. Ruben RM, Molinari MA, Bibbee CA, Childress MA, Harman MS, Reed KP, and Haff GG. The acute effects of an ascending squat protocol on performance during horizontal plyometric jumps. *J Strength Cond Res* 24: 358-369, 2010.
83. Schmolinsky G. *Track and Field: The East German Textbook of Athletics*. Toronto, Canada: Sports Book Publisher, 2004.
84. Seitz L, Saez de Villarreal E, and Haff GG. The temporal profile of postactivation potentiation is related to strength level. *J Strength Cond Res* 28: 706-715, 2014.
85. Seitz LB and Haff GG. Application of methods of inducing postactivation potentiation during the preparation of rugby players. *Strength Cond J* 37: 40-49, 2015.
86. Seitz LB, Riviere M, de Villarreal ES, and Haff GG. The athletic performance of elite rugby league players is improved after an 8-week small-sided game training intervention. *J Strength Cond Res* 28: 971-975, 2014
87. Seitz LB, Trajano GS, Dal Maso F, Haff GG, and Blazevich AJ. Postactivation potentiation during voluntary contractions after continued knee extensor task-specific practice. *Appl Physiol Nutr Metab* 40: 230-237, 2015.
88. Seitz LB, Trajano GS, and Haff GG. The back squat and the power clean elicit different degrees of potentiation. *Int J Sports Physiol Perform* 9: 643-649, 2014.
89. Selye H. *The Stress of Life*. New York, NY: McGraw-Hill, 1956.

90. Siff MC. Supertraining. Denver, CO: Supertraining Institute, 2003.
91. Smith DJ. A framework for understanding the training process leading to elite performance. *Sports Med* 33: 1103-1126, 2003.
92. Stone MH, Moir G, Glaister M, and Sanders R. How much strength is necessary? *Phys Ther Sport* 3: 88-96, 2002.
93. Stone MH, O'Bryant H, and Garhammer J. A hypothetical model for strength training. *J Sports Med* 21: 342-351, 1981.
94. Stone MH, Stone ME, and Sands WA. *Principles and Practice of Resistance Training*. Champaign, IL: Human Kinetics Publishers, 2007.
95. Sukop J and Nelson R. Effect of isometric training on the force-time characteristics of muscle contraction, in: *Biomechanics IV*. RC Nelson, CA Morehouse, eds. Baltimore, MD: University Park Press, 1974, pp 440-447.
96. Thibaudeau C. *Theory and Application of Modern Strength and Power Methods*. North Charleston, SC: Createspace Publishing, 2006.
97. Thorstensson A, Grimby G, and Karlsson J. Force-velocity relations and fiber composition in human knee extensor muscles. *J Appl Physiol* 40: 12-16, 1976.
98. Tillin NA and Bishop D. Factors modulating post-activation potentiation and its effect on performance of subsequent explosive activities. *Sports Med* 39: 147-166, 2009.
99. Toji H and Kaneko M. Effect of multiple-load training on the force-velocity relationship. *J Strength Cond Res* 18: 792-795, 2004.
100. Toji H, Sueti K, and Kaneko M. Effects of combined training programs on force-velocity relation and power output in human muscle. *Jpn J Phys Fitness Sports Med* 44: 439-445, 1995.
101. Verkhoshansky Y and Siff MC. Application of special strength training means. In *Supertraining: Expanded Edition*. Rome, Italy: Verkhoshansky, 2009, pp 287-294.
102. Verkhoshansky YU. How to set up a training program. *Sov Sports Rev* 16: 123-136, 1981.
103. Verkhoshansky YU. *Programming and Organization of Training*. Moscow: Fizkultura i Sport, 1985.
104. Verkhoshansky YU. *Fundamentals of Special Strength Training in Sport*. Livonia, MI: Sportivy Press, 1986.
105. Verkhoshansky YU. *Special Strength Training: A Practical Manual for Coaches*. Muskegon Heights, MI: Ultimate Athlete Concepts, 2006
106. Verkhoshansky YU. Theory and methodology of sport preparation: block training system for top-level athletes. *Teoria i Practica Physicheskoy Kulturi* 4: 2-14, 2007.
107. Verkhoshansky Y and Siff MC. Programming and organisation of training. In *Supertraining: Expanded Editions*. Rome Italy: Verkhoshansky, 2009, pp 313-392.
108. Viitasalo JT. Rate of force development, muscle structure and fatigue, in: *Biomechanics VII-A: Proceedings of the 7th International Congress of Biomechanics*. A Morecki, F Kazimirz, K Kedzior, A Wit, eds. Baltimore, MD: University Park Press, 1981, pp 136-141.
109. Wilson GJ, Newton RU, Murphy AJ, and Humphries BJ. The optimal training load for the development of dynamic athletic performance. *Med Sci Sports Exerc* 25: 1279-1286, 1993.
110. Yakovlev, N.N. *Sports Biochemistry*. Leipzig, Germany: Deutsche HochschuleKörperkulture (German Institute for Physical Culture), 1967.
111. Yetter M and Moir GL. The acute effects of heavy back and front squats on speed during forty-meter sprint trials. *J Strength Cond Res* 22: 159-165, 2008.
112. Zamparo P, Minetti AE, and di Prampero PE. Interplay among the changes of muscle strength, cross-sectional area and maximal explosive power: theory and facts. *Eur J Appl Physiol* 88: 193- 202, 2002.
113. Zatsiorsky VM. Basic concepts of training theory. In *Science and Practice of Strength Training*. Champaign, IL: Human Kinetics, 1995, pp 3-19.
114. Zatsiorsky VM. Timing in strength training. In *Science and Practice of Strength Training*. Champaign, IL: Human Kinetics Publishers, 1995, pp 108-135.
115. Zatsiorsky VM and Kraemer WJ. *Science and Practice of Strength Training*, 2nd ed. Champaign, IL: Human Kinetics, 2006.
116. Zatsiorsky VM and Kraemer WJ. Timing in strength training. In *Science and Practice of Strength Training*, 2nd ed. Champaign, IL: Human Kinetics Publishers, 2006, pp 89-108.

Chapter 4

1. Arampatzis A, Degens H, Baltzopoulos V, and Rittweger J. Why do older sprinters reach the finish line later? *Exerc Sport Sci Rev* 39: 18-22, 2011.
2. Armstrong N, Welsman JR, and Chia MY. Short term power output in relation to growth and maturation. *Br J Sports Med* 35: 118-124, 2001.
3. Bean JF, Kiely DK, Herman S, Leveille SG, Mizer K, Frontera WR, and Fielding RA. The relationship between leg power and physical performance in mobility-limited older people. *J Am Geriatr Soc* 50: 461-467, 2002.
4. Behm DG and Sale DG. Intended rather than actual movement velocity determines velocity-specific training response. *J Appl Physiol* 74: 359-368, 1993.
5. Behringer M, Vom Heede A, Matthews M, and Meester J. Effects of strength training on motor performance skills in children and adolescents: a meta-analysis. *Pediatr Exerc Sci* 23: 186-206, 2011.
6. Beunen G and Malina RM. Growth and physical performance relative to the timing of the adolescent spurt. *Exerc Sport Sci Rev* 16: 503-540, 1988.
7. Beunen G, Ostyn M, Simons J, Renson R, Claessens AL, Vanden Eynde B, Lefevre J, Vanreusel B, Malina RM, and van't Hof MA. Development and tracking in fitness components: Leuven longitudinal study on lifestyle, fitness and health. *Int J Sports Med* 18 Suppl 3: S171-178, 1997.
8. Bonnefoy M, Kořka T, Arzac LM, Berthouze SE, and Lacour JR. Peak anaerobic power in elderly men. *Eur J Appl Physiol Occup Physiol* 77: 182-188, 1998
9. Branta C, Haubensřricker J, and Seefeldt V. Age changes in motor skills during childhood and adolescence. *Exerc Sport Sci Rev* 12: 467-520, 1984.
10. Caserotti P, Aagaard P, Simonsen EB, and Puggaard L. Contraction-specific differences in maximal muscle power during

- stretch-shortening cycle movements in elderly males and females. *Eur J Appl Physiol* 84: 206-212, 2001.
11. Chaouachi A, Hammami R, Kaabi S, Chamari K, Drinkwater EJ, and Behm DG. Olympic weightlifting and plyometric training with chil dren provides similar or greater performance improvements than traditional resistance training. *J Strength Cond Res* 28: 1483-1496, 2014.
 12. Cohen DD, Voss C, Taylor MJ, Delextrat A, Ogunleye AA, and Sanderoock GR. Ten-year secular changes in muscular fitness in English children. *Acta Paediatr* 100: e175-177, 2011.
 13. Cormie P, McGuigan MR, and Newton RU. Developing maximal neuromuscular power. Part II: training considerations for improving maximal power production. *Sports Med* 41: 125-146, 2011.
 14. Cuoco A, Callahan DM, Sayers S, Frontera WR, Bean J, and Fielding RA. Impact of muscle power and force on gait speed in disabled older men and women. *J Gerontol A Biol Sci Med Sci* 59: 1200-1206, 2004.
 15. Dayne AM, McBride JM, Nuzzo JL, Triplett NT, Skinner J, and Burr A. Power output in the jump squat in adolescent male athletes. *J Strength Cond Res* 25: 585-589, 2011.
 16. de Vos NJ, Singh NA, Ross DA, Stavrinou TM, Orr R, and Fiatarone Singh MA. Optimal load for increasing muscle power during explosive resistance training in older adults. *J Gerontol A Biol Sci Med Sci* 60: 638-647, 2005.
 17. de Vos NJ, Singh NA, Ross DA, Stavrinou TM, Orr R, and Fiatarone Singh MA. Effect of powertraining intensity on the contribution of force and velocity to peak power in older adults. *J Aging Phys Act* 16: 393-407, 2008.
 18. Dotan R, Mitchell C, Cohen R, Klentrou P, Gabriel D, and Falk B. Child-adult differences in muscle activation—a review. *Pediatr Exerc Sci* 24: 2-21, 2012.
 19. Drey M, Sieber CC, Degens H, McPhee J, Korhonen MT, Muller K, Ganse B, and Rittweger J. Relation between muscle mass, motor units and type of training in master athletes. *Clin Physiol Funct Imaging* 36: 70-76, 2016.
 20. Earles DR, Judge JO, and Gunnarsson OT. Velocity training induces power-specific adaptations in highly functioning older adults. *Arch Phys Med Rehabil* 82: 872-878, 2001.
 21. Faigenbaum AD, Farrell A, Fabiano M, Radler T, Naclerio F, Ratamess NA, Kang J, and Myer GD. Effects of integrative neuromuscular training on fitness performance in children. *Pediatr Exerc Sci* 23: 573-584, 2011.
 22. Faigenbaum AD, Farrell AC, Fabiano M, Radler TA, Naclerio F, Ratamess NA, Kang J, and Myer GD. Effects of detraining on fitness performance in 7-year-old children. *J Strength Cond Res* 27: 323-330, 2013.
 23. Faigenbaum AD, Lloyd RS, and Myer GD. Youth resistance training: past practices, new perspectives, and future directions. *Pediatr Exerc Sci* 25: 591-604, 2013.
 24. Fielding RA, LeBrasseur NK, Cuoco A, Bean J, Mizer K, and Fiatarone Singh MA. High-velocity resistance training increases skeletal muscle peak power in older women. *J Am Geriatr Soc* 50: 655-662, 2002.
 25. Flanagan SD, Dunn-Lewis C, Hatfield DL, DiStefano LJ, Fragala MS, Shoap M, Gotwald M, Trail J, Gomez AL, Volek JS, Cortis C, Comstock BA, Hooper DR, Szivak TK, Looney DP, DuPont WH, McDermott DM, Gaudiose MC, and Kraemer WJ. Developmental differences between boys and girls result in sex-specific physical fitness changes from fourth to fifth grade. *J Strength Cond Res* 29: 175-180, 2015.
 26. Foldvari M, Clark M, Lavoilette LC, Bernstein MA, Kaliton D, Cañaneda C, Pu CT, Hausdorff JM, Fielding RA, and Singh MA. Association of muscle power with functional status in communitydwelling elderly women. *J Gerontol A Biol Sci Med Sci* 55: M192-199, 2000.
 27. Ford KR, Myer GD, Brent JL, and Hewett TE. Hip and knee extensor moments predict vertical jump height in adolescent girls. *J Strength Cond Res* 23: 1327-1331, 2009.
 28. Gorostiaga EM, Izquierdo M, Ruesta M, Iribarren J, Gonzalez-Badillo JJ, and Ibanez J. Strength training effects on physical performance and serum hormones in young soccer players. *Eur J Appl Physiol* 91: 698-707, 2004.
 29. Hakkinen K, Kraemer WJ, Newton RU, and Alen M. Changes in electromyographic activity, muscle fibre and force production characteristics during heavy resistance/power strength training in middle-aged and older men and women. *Acta Physiol Scand* 171: 51-62, 2001.
 30. Harries SK, Lubans DR, and Callister R. Resistance training to improve power and sports performance in adolescent athletes: a systematic review and meta-analysis. *J Sci Med Sport* 15: 532-540, 2012.
 31. Harrison AJ and Gaffney S. Motor development and gender effects on stretch-shortening cycle performance. *J Sci Med Sport* 4: 406-415, 2001.
 32. Hazell T, Kenno K, and Jakobi J. Functional benefit of power training for older adults. *J Aging Phys Act* 15: 349-359, 2007.
 33. Hinman JD, Peters A, Cabral H, Rosene DL, Hollander W, Rasband MN, and Abraham CR. Age-related molecular reorganization at the node of Ranvier. *J Comp Neurol* 495: 351-362, 2006.
 34. Jankelowitz SK, McNulty PA, and Burke D. Changes in measures of motor axon excitability with age. *Clin Neurophysiol* 118: 1397-1404, 2007.
 35. Keiner M, Sander A, Wirth K, Caruso O, Immesberger P, and Zawieja M. Strength performance in youth: trainability of adolescents and children in the back and front squats. *J Strength Cond Res* 27: 357-362, 2013.
 36. Komi PV. Stretch-shortening cycle: a powerful model to study normal and fatigued muscle. *J Biomech* 33: 1197-1206, 2000.
 37. Leard JS, Cirillo MA, Katsnelson E, Kimiatek DA, Miller TW, Trebinovic K, and Garbalosa JC. Validity of two alternative systems for measuring vertical jump height. *J Strength Cond Res* 21: 1296-1299, 2007.
 38. Lexell J. Ageing and human muscle: observations from Sweden. *Can J Appl Physiol* 18: 2-18, 1993.
 39. Lloyd RS, Cronin JB, Faigenbaum AD, Haff GG, Howard R, Kraemer WJ, Micheli LJ, Myer GD and Oliver JL. The National Strength and Conditioning Association position statement on longterm athletic development. *J Strength Cond Res* 30: 1491-1509, 2016.
 40. Lloyd RS, Faigenbaum AD, Stone MH, Oliver JL, Jeffreys I, Moody JA, Brewer C, Pierce KC, McCambridge TM, Howard R, Herrington L, Hainline B, Micheli LJ, Jaques R, Kraemer WJ, McBride MG, Best TM, Chu DA, Alvar BA, and Myer GD. Position statement on youth resistance training: the 2014 International Consensus. *Br J Sports Med* 48: 498-505, 2014.
 41. Lloyd RS and Oliver JL. The youth physical development model: a new approach to long-term athletic development. *Strength Cond J* 34: 61-72, 2012.
 42. Lloyd RS, Oliver JL, Faigenbaum AD, Myer GD, and De Ste Croix MB. Chronological age vs. biological maturation: implications for exercise programming in youth. *J Strength Cond Res* 28: 1454-1464, 2014.

43. Lloyd RS, Oliver JL, Hughes MG, and Williams CA. Reliability and validity of field-based measures of leg stiffness and reactive strength index in youths. *J Sports Sci* 27: 1565-1573, 2009.
44. Lloyd RS, Oliver JL, Hughes MG, and Williams CA. The influence of chronological age on periods of accelerated adaptation of stretch-shortening cycle performance in pre and postpubescent boys. *J Strength Cond Res* 25: 1889-1897, 2011.
45. Lloyd RS, Oliver JL, Hughes MG, and Williams CA. Specificity of test selection for the appropriate assessment of different measures of stretch-shortening cycle function in children. *J Sports Med Phys Fitness* 51: 595-602, 2011.
46. Lloyd RS, Oliver JL, Hughes MG, and Williams CA. Age-related differences in the neural regulation of stretch-shortening cycle activities in male youths during maximal and sub-maximal hopping. *J Electromyogr Kinesiol* 22: 37-43, 2012.
47. Lloyd RS, Oliver JL, Hughes MG, and Williams CA. The effects of 4-weeks of plyometric training on reactive strength index and leg stiffness in male youths. *J Strength Cond Res* 26: 2812-2819, 2012.
48. Malina RM, Eisenmann JC, Cumming SP, Ribeiro B, and Aroso J. Maturity-associated variation in the growth and functional capacities of youth football (soccer) players 13-15 years. *Eur J Appl Physiol* 91: 555-562, 2004.
49. Marsh AP, Miller ME, Rejeski WJ, Hutton SL, and Kritchevsky SB. Lower extremity muscle function after strength or power training in older adults. *J Aging Phys Act* 17: 416-443, 2009.
50. Matos N and Winsley RJ. Trainability of young athletes and overtraining. *J Sports Sci Med* 6: 353-367, 2007.
51. McMaster DT, Gill N, Cronin J, and McGuigan M. A brief review of strength and ballistic assessment methodologies in sport. *Sports Med* 44: 603-623, 2014.
52. Meylan CM, Cronin JB, Oliver JL, Hopkins WG, and Contreras B. The effect of maturation on adaptations to strength training and detraining in 11-15-year-olds. *Scand J Med Sci Sports* 24: e156-164, 2014.
53. Meylan CMP, Cronin JB, Oliver JL, Hughes MG, and Manson S. An evidence-based model of power development in youth soccer. *J Sports Sci Coaching* 9: 1241-1264, 2014.
54. Miszko TA, Cress ME, Slade JM, Covey CJ, Agrawal SK, and Doerr CE. Effect of strength and power training on physical function in community-dwelling older adults. *J Gerontol A Biol Sci Med Sci* 58: 171-175, 2003
55. Myer GD, Lloyd RS, Brent JL, and Faigenbaum AD. How young is "too young" to start training? *ACSMs Health Fit J* 17: 14-23, 2013.
56. Newton RU, Hakkinen K, Hakkinen A, McCormick M, Volek J, and Kraemer WJ. Mixed-methods resistance training increases power and strength of young and older men. *Med Sci Sports Exerc* 34: 1367-1375, 2002.
57. Newton RU and Kraemer WJ. Developing explosive power: implications for a mixed method training strategy. *Strength Cond J* 16: 20-31, 1994.
58. Nogueira W, Gentil P, Mello SN, Oliveira RJ, Bezerra AJ, and Bottaro M. Effects of power training on muscle thickness of older men. *Int J Sports Med* 30: 200-204, 2009.
59. Pereira A, Izquierdo M, Silva AJ, Costa AM, Bastos E, Gonzalez-Badillo JJ, and Marques MC. Effects of high-speed power training on functional capacity and muscle performance in older women. *Exp Gerontol* 47: 250-255, 2012.
60. Pescatello LS, Arena R, Riebe D, and Thompson PD. *ACSM's Guidelines for Exercise Testing and Prescription*. Philadelphia, PA: Lippincott, Williams, and Wilkins, 2014.
61. Petrella JK, Kim JS, Tuggle SC, and Bamman MM. Contributions of force and velocity to improved power with progressive resistance training in young and older adults. *Eur J Appl Physiol* 99: 343-351, 2007.
62. Piirainen JM, Cronin NJ, Avela J, and Linnamo V. Effects of plyometric and pneumatic explosive strength training on neuromuscular function and dynamic balance control in 60-70 year old males. *J Electromyogr Kinesiol* 24: 246-252, 2014.
63. Porter MM. Power training for older adults. *Appl Physiol Nutr Metab* 31: 87-94, 2006.
64. Porter MM, Vandervoort AA, and Lexell J. Aging of human muscle: structure, function and adaptability. *Scand J Med Sci Sports* 5: 129-142, 1995.
65. Qatman CE, Ford KR, Myer GD, and Hewett TE. Maturation leads to gender differences in landing force and vertical jump performance: a longitudinal study. *Am J Sports Med* 34: 806-813, 2006.
66. Regterschot GR, Zhang W, Baldus H, Stevens M, and Zijlstra W. Sensor-based monitoring of sit-to-stand performance is indicative of objective and self-reported aspects of functional status in older adults. *Gait Posture* 41: 935-940, 2015.
67. Reid KF and Fielding RA. Skeletal muscle power: a critical determinant of physical functioning in older adults. *Exerc Sport Sci Rev* 40: 4-12, 2012.
68. Reid KF, Martin KI, Doros G, Clark DJ, Hau C, Patten C, Phillips EM, Frontera WR, and Fielding RA. Comparative effects of light or heavy resistance power training for improving lower extremity power and physical performance in mobility-limited older adults. *J Gerontol A Biol Sci Med Sci* 70: 374-380, 2015
69. Reilly T, Williams AM, Nevill A, and Franks A. A multidisciplinary approach to talent identification in soccer. *J Sports Sci* 18: 695-702, 2000.
70. Runhaar J, Collard DC, Singh AS, Kemper HC, van Mechelen W, and Chinapaw M. Motor fitness in Dutch youth: differences over a 26-year period (1980-2006). *J Sci Med Sport* 13: 323-328, 2010.
71. Sander A, Keiner M, Wirth K, and Schmidtbleicher D. Influence of a 2-year strength training programme on power performance in elite youth soccer players. *Eur J Sport Sci* 13: 445-451, 2013.
72. Sayers SP, Bean J, Cuoco A, LeBrasseur NK, Jette A, and Fielding RA. Changes in function and disability after resistance training: does velocity matter? a pilot study. *Am J Phys Med Rehabil* 82: 605-613, 2003.
73. Sayers SP and Gibson K. A comparison of high-speed power training and traditional slow-speed resistance training in older men and women. *J Strength Cond Res* 24: 3369-3380, 2010.
74. Shaibi GQ, Cruz ML, Ball GD, Weigensberg MJ, Salem GJ, Crespo NC, and Goran MI. Effects of resistance training on insulin sensitivity in overweight Latino adolescent males. *Med Sci Sports Exerc* 38: 1208-1215, 2006.
75. Skelton DA, Greig CA, Davies JM, and Young A. Strength, power and related functional ability of healthy people aged 65-89 years. *Age Ageing* 23: 371-377, 1994.
76. Skelton DA, Kennedy J, and Rutherford OM. Explosive power and asymmetry in leg muscle function in frequent fallers and non-fallers aged over 65. *Age Ageing* 31: 119-125, 2002.
77. Stone MH, O'Bryant HS, McCoy L, Coglianese R, Lehmkuhl M, and Schilling B. Power and maximum strength relationships during performance of dynamic and static weighted jumps.

J Strength Cond Res 17: 140-147, 2003.

78. Tanson A, Ratel S, Le Fur Y, Cozzone P, and Bendahan D. Effect of maturation on the relationship between muscle size and force production. *Med Sci Sports Exerc* 40: 918-925, 2008.
79. Tremblay MS, Gray CE, Akinroye K, Harrington DM, Katzmarzyk PT, Lambert EV, Liukkonen J, Maddison R, Ocansey RT, Onywera VO, Prišta A, Reilly JJ, Rodriguez Martinez MP, Sarmiento Duenas OL, Standage M, and Tomkinson G. Physical activity of children: a global matrix of grades comparing 15 countries. *J Phys Act Health* 11 Suppl 1: S113-125, 2014.
80. Tschopp M, Sattelmayer MK, and Hilfiker R. Is power training or conventional resistance training better for function in elderly persons? A meta-analysis. *Age Ageing* 40: 549-556, 2011.
81. Tudorascu I, Sfiredel V, Riza AL, Danculescu Miulescu R, Ianosi SL, and Danoiu S. Motor unit changes in normal aging: a brief review. *Rom J Morphol Embryol* 55: 1295-1301, 2014.
82. Ward RE, Boudreau RM, Caserotti P, Harris TB, Zivkovic S, Goodpašter BH, Satterfield S, Kritchevsky S, Schwartz AV, Vinik AI, Cauley JA, Newman AB, Strotmeyer ES, and Health ABC Study. Sensory and motor peripheral nerve function and longitudinal changes in quadriceps strength. *J Gerontol A Biol Sci Med Sci* 70: 464-470, 2015.
83. Wong PL, Chamari K, and Wisloff U. Effects of 12-week on-field combined strength and power training on physical performance among U-14 young soccer players. *J Strength Cond Res* 24: 644-652, 2010.

Chapter 5

1. Argus CK, Gill ND, Keogh JW, and Hopkins WG. Assessing the variation in the load that produces maximal upper-body power. *J Strength Cond Res* 28: 240-244, 2014.
2. Baker D. A series of studies on the training of high-intensity muscle power in rugby league football players. *J Strength Cond Res* 15: 198-209, 2001.
3. Baker D, Nance S, and Moore M. The load that maximizes the average mechanical power output during explosive bench press throws in highly trained athletes. *J Strength Cond Res* 15: 20-24, 2001.
4. Bartolomei S, Hoffman JR, Merni F, and Stout JR. A comparison of traditional and block periodized strength training programs in trained athletes. *J Strength Cond Res* 28: 990-997, 2014.
5. Bellar DM, Muller MD, Barkley JE, Kim CH, Ida K, Ryan EJ, Bliss MV, and Glickman EL. The effects of combined elastic- and free-weight tension vs. free-weight tension on one-repetition maximum strength in the bench press. *J Strength Cond Res* 25: 459-463, 2011.
6. Bevan HR, Bunce PJ, Owen NJ, Bennett MA, Cook CJ, Cunningham DJ, Newton RU, and Kilduff LP. Optimal loading for the development of peak power output in professional rugby players. *J Strength Cond Res* 24: 43-47, 2010.
7. Bouhlef E, Chelly MS, Tabka Z, and Shephard R. Relationships between maximal anaerobic power of the arms and legs and javelin performance. *J Sports Med Phys Fitness* 47: 141-146, 2007.
8. Calatayud J, Borreani S, Colado JC, Martin F, Tella V, and Andersen LL. Bench press and push up at comparable levels of muscle activity results in similar strength gains. *J Strength Cond Res* 29: 246-253, 2015.
9. Chelly MS, Hermassi S, Aouadi R, and Shephard RJ. Effects of 8-week in-season plyometric training on upper and lower limb performance of elite adolescent handball players. *J Strength Cond Res* 28: 1401-1410, 2014.
10. Chelly MS, Hermassi S, and Shephard RJ. Relationships between power and strength of the upper and lower limb muscles and throwing velocity in male handball players. *J Strength Cond Res* 24: 1480-1487, 2010.
11. Comstock BA, Solomon-Hill G, Flanagan SD, Earp JE, Luk HY, Dobbins KA, Dunn-Lewis C, Fragala MS, Ho JY, Hatfield DL, Vingren JL, Denegar CR, Volek JS, Kupchak BR, Maresh CM, and Kraemer WJ. Validity of the Myotest in measuring force and power production in the squat and bench press. *J Strength Cond Res* 25: 2293-2297, 2011.
12. Dines JS, Bedi A, Williams PN, Dodson CC, Ellenbecker TS, Altchek DW, Windler G, and Dines DM. Tennis injuries: epidemiology, pathophysiology, and treatment. *J Am Acad Orthop Surg* 23: 181-189, 2015.
13. Dunn-Lewis C, Luk HY, Comstock BA, Szivak TK, Hooper DR, Kupchak BR, Watts AM, Putney BJ, Hydren JR, Volek JS, Denegar CR, and Kraemer WJ. The effects of a customized over-the-counter mouth guard on neuromuscular force and power production in trained men and women. *J Strength Cond Res* 26: 1085-1093, 2012.
14. Durall CJ, Udermann BE, Johansen DR, Gibson B, Reineke DM, and Reuteman P. The effects of preseason trunk muscle training on low-back pain occurrence in women collegiate gymnasts. *J Strength Cond Res* 23: 86-92, 2009.
15. Earp JE and Kraemer WJ. Medicine ball training implications for rotational power sports. *Strength Cond J* 32: 20-25, 2010.
16. Falvo MJ, Schilling BK, and Weiss LW. Techniques and considerations for determining isoinertial upper-body power. *Sports Biomech* 5: 293-311, 2015.
17. Ghigiarelli JJ, Nagle EF, Gross FL, Robertson RJ, Irrgang JJ, and Myslinski T. The effects of a 7-week heavy elastic band and weight chain program on upper-body strength and upper-body power in a sample of division I-AA football players. *J Strength Cond Res* 23: 756-764, 2009.
18. Goto K and Morishima T. Compression garment promotes muscular strength recovery after resistance exercise. *Med Sci Sports Exerc* 46: 2265-2270, 2014.
19. Hooper DR, Dulkis LL, Secola PJ, Holtzum G, Harper SP, Kalkowski RJ, Comstock BA, Szivak TK, Flanagan SD, Looney DP, DuPont WH, Maresh CM, Volek JS, Culley KP, and Kraemer WJ. The roles of an upper body compression garment on athletic performances. *J Strength Cond Res*, 29: 2655-2660, 2015.
20. Jancosko JJ and Kazanjian JE. Shoulder injuries in the throwing athlete. *Phys Sportsmed* 40: 84-90, 2012.
21. Jones MT. Effect of compensatory acceleration training in combination with accommodating resistance on upper body strength in collegiate athletes. *Open Access J Sports Med* 5: 183-189, 2014.
22. Joy JM, Lowery RP, Oliveira de Souza E, and Wilson JM. Elastic bands as a component of periodized resistance training. *J Strength Cond Res*, 30: 2100-2106, 2016.
23. Kennedy DJ, Visco CJ, and Press J. Current concepts for shoulder training in the overhead athlete. *Curr Sports Med Rep* 8: 154-160, 2009.
24. Kibler WB, Press J, and Sciascia A. The role of core stability in athletic function. *Sports Med* 36: 189-198, 2006.
25. Kraemer WJ, Flanagan SD, Comstock BA, Fragala MS, Earp JE, Dunn-Lewis C, Ho JY, Thomas GA, Solomon-Hill G, Penwell

- ZR, Powell MD, Wolf MR, Volek JS, Denegar CR, and Maresh CM. Effects of a whole body compression garment on markers of recovery after a heavy resistance workout in men and women. *J Strength Cond Res* 24: 804-814, 2010.
26. Mayhew JL, Johns RA, and Ware JS. Changes in absolute upper body power following resistance training in college males. *J Appl Sport Science Res*: 187, 1992.
 27. McGill SM. Low back stability: from formal description to issues for performance and rehabilitation. *Exerc Sport Sci Rev* 29: 26-31, 2001.
 28. McGill SM, Childs A, and Liebenson C. Endurance times for low back stabilization exercises: clinical targets for testing and training from a normal database. *Arch Phys Med Rehabil* 80: 941-944, 1999.
 29. Newton RU, Murphy AJ, Humphries BJ, Wilson GJ, Kraemer WJ, and Hakkinen K. Influence of load and stretch shortening cycle on the kinematics, kinetics and muscle activation that occurs during explosive upper-body movements. *Eur J Appl Physiol Occup Physiol* 75: 333-342, 1997.
 30. Rucci JA and Tomporowski PD. Three types of kinematic feedback and the execution of the hang power clean. *J Strength Cond Res* 24: 771-778, 2010.
 31. Shinkle J, Nesser TW, Demchak TJ, and McMannus DM. Effect of core strength on the measure of power in the extremities. *J Strength Cond Res* 26: 373-380, 2012.
 32. Shoenberger TC, Ramirez DA, Rovetti RJ, Kohler DR, and Almstedt HC. The effects of 24 weeks of resistance training with simultaneous elastic and free weight loading on muscular performance of novice lifters. *J Hum Kinet* 29: 93-106, 2011.

Chapter 7

1. Baker D and Nance S. The relation between running speed and measures of strength and power in professional rugby league players. *J Strength Cond Res* 13: 230-235, 1999.
2. Canavan PK, Garrett GE, and Armstrong LE. Kinematic and kinetic relationships between an Olympic-style lift and the vertical jump. *J Strength Cond Res* 10: 127-130, 1996.
3. Carlock JM, Smith SL, Hartman MJ, Morris RT, Ciroslan DA, Pierce KC, Newton RU, Harman EA, Sands WA, and Stone MH. The relationship between vertical jump power estimates and weightlifting ability: a field-test approach. *J Strength Cond Res* 18: 534-539, 2004.
4. Channell BT and Barfield JP. Effect of Olympic and traditional resistance training on vertical jump improvement in high school boys. *J Strength Cond Res* 22: 1522-1527, 2008.
5. Cormie P, McCaulley G, Triplett N, and McBride J. Optimal loading for maximal power output during lower-body resistance exercises. *Med Sci Sports Exerc* 39: 340-349, 2007.
6. Cormie P, McGuigan MR, and Newton RU. Developing maximal neuromuscular power. Part I: biological basis of maximal power production. *Sports Med* 41: 17-38, 2011a.
7. Cormie P, McGuigan MR, and Newton RU. Developing maximal neuromuscular power. Part II: training considerations for improving maximal power production. *Sports Med* 41: 125-146, 2011b.
8. Garhammer J. Power production by Olympic weightlifters. *Med Sci Sports Exerc* 12: 54-60, 1980.
9. Garhammer J. Energy flow during Olympic weightlifting. *Med Sci Sports Exerc* 14: 353-360, 1982.
10. Garhammer J. A comparison of maximal power outputs between elite male and female weightlifters in competition. *Int J Sport Biomech* 7: 3-11, 1991.
11. Garhammer J. A review of power output studies of Olympic and powerlifting: methodology, performance prediction, and evaluation tests. *J Strength Cond Res* 7: 76-89, 1993.
12. Garhammer J and Gregor R. Propulsion forces as a function of intensity for weightlifting and vertical jumping. *J Appl Sports Sci Res* 6: 129-134, 1992.
13. Hori N, Newton RU, Andrews WA, Kawamori N, McGuigan MR, and Nosaka K. Does performance of hang power clean differentiate performance of jumping, sprinting, and changing of direction? *J Strength Cond Res* 22: 412-418, 2008.
14. Kawamori N, Crum AJ, Blumert PA, Kulik JR, Childers JT, Wood JA, Stone MH, and Haff GG. Influence of different relative intensities on power output during the hang power clean: identification of the optimal load. *J Strength Cond Res* 19: 698-708, 2005.
15. Kilduff L, Bevan H, Owen N, Kingsley M, Bunce P, Bennett M, and Cunningham D. Optimal loading for peak power output during the hang power clean in professional rugby players. *Int J Sports Physiol Perform* 2: 260-269, 2007.
16. Storey A and Smith H. Unique aspects of competitive weightlifting: performance, training and physiology. *Sports Med* 42: 769-790, 2012.
17. Tricoli V, Lamas L, Carnevale R, and Ugrinowitsch C. Short-term effects on lower-body functional power development: weightlifting vs. vertical jump training programs. *J Strength Cond Res* 19: 433-437, 2005.

Chapter 8

1. Adams K, O'Shea J, O'Shea K, and Climstein M. The effects of six weeks of squat, plyometric and squat-plyometric training on power production. *J Appl Sport Sci Res* 6: 36-41, 1992.
2. Anderson C, Sforzo G, and Sigg J. The effects of combining elastic and free weight resistance on strength and power in athletes. *J Strength Cond Res* 22: 567-574, 2008.
3. Baker D. A series of studies on the training of high intensity muscle power in rugby league football players. *J Strength Cond Res* 15: 198-209, 2001.
4. Baker D and Nance S. The relationship between strength and power in professional rugby league players. *J Strength Cond Res* 13: 224-229, 1999.
5. Baker D and Newton R. Methods to increase the effectiveness of maximal power training for the upper body. *J Strength Cond Res* 27: 24-32, 2005.
6. Baker D and Newton R. Effect of kinetically altering a repetition via the use of chain resistance on velocity during the bench press. *J Strength Cond Res* 23: 1941-1946, 2009.
7. Bellar D, Muller M, Barkley J, Kim C, Ida K, Ryan E, Bliss M, and Glickman E. The effects of combined elastic- and free-weight tension vs. free-weight tension on one-repetition maximum strength in the bench press. *J Strength Cond Res* 25: 459-463, 2011.

8. Berning J, Coker C, and Adams K. Using chains for strength and conditioning. *Strength and Cond J* 26: 80-84, 2004.
9. Blazevich A, Gill N, Bronks R, and Newton R. Training-specific muscle architecture adaptation after 5-wk training in athletes. *Med Sci Sports Exerc* 35: 2013-2022, 2003.
10. Brandon R, Howatson G, Strachan F, and Hunter A. Neuromuscular response differences to power vs strength back squat exercise in elite athletes. *Scand J Med Sci Sport* 25: 630-639, 2015.
11. Burger T, Boyer-Kendrick T, and Dolny D. Complex training compared to a combined weight training and plyometric training program. *J Strength Cond Res* 14: 360, 2000.
12. Carlock J, Smith S, Hartman M, Morris R, Ciroslan D, Pierce K, Newton R, Hartman E, Sands W, and Stone M. The relationship between vertical jump power estimates and weightlifting ability: a field-test approach. *J Strength Cond Res* 18: 534-539, 2004.
13. Chatzopoulos D, Michailidis C, Giannakos A, Alexiou K, Patikas D, Antonopoulos C, and Kot zamanidis C. Postactivation potentiation effects after heavy resistance exercise on running speed. *J Strength Cond Res* 21: 1278-1281, 2007.
14. Chiu L, Fry A, Schilling B, Johnson E, and Weiss L. Neuromuscular fatigue and potentiation following two successive high intensity resistance exercise sessions. *Eur J Appl Physiol Occup Physiol* 92: 385-392, 2004.
15. Chiu L, Fry A, Weiss L, Schilling B, Brown L, and Smith S. Postactivation potentiation response in athletic and recreationally trained individuals. *J Strength Cond Res* 17: 671-677, 2003.
16. Clark R, Bryant A, and Humphries B. A comparison of force curve profiles between the bench press and ballistic bench throws. *J Strength Cond Res* 22: 1755-1759, 2008.
17. Cormie P, McGuigan M, and Newton R. Influence of strength on magnitude and mechanisms of adaptation to power training. *Med Sci Sports Exerc* 42: 1566-1581, 2010.
18. Cormie P, McGuigan M, and Newton R. Developing maximal neuromuscular power. Part II: training considerations for improved maximal power production. *Sports Med* 41: 125-146, 2011.
19. Cormie P, McGuigan M, and Newton R. Developing neuromuscular power. Part I: biological basis of maximal power production. *Sports Med* 41: 17-38, 2011.
20. Cronin J, McNair P, and Marshall R. The effects of bungee weight training on muscle function and functional performance. *J Sport Sci* 21: 59-71, 2003.
21. Cronin J, McNair P, and Marshall R. Force-velocity analysis of strength-training techniques and load: implications for training strategy and research. *J Strength Cond Res* 17: 148-155, 2003.
22. Dape na J. The high jump, in: *Biomechanics in Sport: Performance Enhancement and Injury Prevention*. Zatsiorsky V, ed. Oxford, UK: Blackwell Science, 2000, pp 284-311.
23. de Villarreal E, Izquierdo M, and Gonzalez-Badillo J. Enhancing jumping performance after combined vs. maximal power, heavy-resistance, and plyometric training alone. *J Strength Cond Res* 25: 3274-3281, 2011.
24. Docherty D and Hodgson M. The application of postactivation potentiation to elite sport. *Int J Sports Physiol Perf* 2: 439-444, 2007.
25. Ebben W. Complex training: a brief review. *J Sport Sci Med* 1: 42-46, 2002.
26. Ebben W and Jensen R. Electromyographic and kinematic analysis of traditional, chain, and elastic band squats. *J Strength Cond Res* 16: 547-550, 2002.
27. Ebben W and Watts P. A review of combined weight training and plyometric training modes: complex training. *Strength and Cond J* 20: 18-27, 1998.
28. Elliot B, Wilson G, and Kerr G. A biomechanical analysis of the sticking region in the bench press. *Med Sci Sports Exerc* 21: 450-462, 1989.
29. Evans A, Hodgkins T, Durham M, Berning J, and Adams K. The acute effects of 5RM bench press on power output. *Med Sci Sports Exerc* 32: S311, 2000.
30. Faigenbaum A, O'Connell J, La Rosa R, and Weščcott W. Effects of strength training and complex training on upper-body strength and endurance development in children. *J Strength Cond Res* 13: 424, 1999.
31. Fatourous I, Jamurtas A, Leontsini D, Taxildaris K, Aggelousis N, Kostopoulos N, and Buck enmeyer P. Evaluation of plyometric exercise training, weight training, and their combination on vertical jump and leg strength. *J Strength Cond Res* 14: 470-476, 2000.
32. Flanagan E and Comyns T. The use of contact time and the reactive strength index to optimize fast stretch-shortening cycle training. *Strength and Cond J* 30: 33-38, 2008.
33. Fleck S and Kraemer W. *Designing Resistance Training Programs*. Champaign, IL: Human Kinetics, 2004.
34. Folland J and Williams A. The adaptations to strength training: morphological and neurological contributions to increased strength. *Sports Med* 37: 145-168, 2007.
35. French D, Kraemer W, and Cooke C. Changes in dynamic exercise performance following a sequence of preconditioning isometric muscle actions. *J Strength Cond Res* 17: 678-685, 2003.
36. Friedmann-Bette B, Bauer T, Kinscherf R, Vorwald S, Klute K, Bischoff D, Müller H, Weber M, Metz J, Kauczor H, Bärtsch P, and Billeter R. Effects of strength training with eccentric overload on muscle adaptation in male athletes. *Sports Med* 108: 821-836, 2010.
37. Frost D, Cronin J, and Newton R. A biomechanical evaluation of resistance: fundamental concepts for training and sports performance. *Sports Med* 40: 303-326, 2010.
38. García-Ramos A, Padiál P, Haff G, Argüelles-Cienfuegos J, García-Ramos M, Conde-Pipó J, and Feriche B. Effect of different interrepetition rest periods on barbell velocity loss during the ballistic bench press exercise. *J Strength Cond Res* 29: 2388-2396, 2015.
39. Garhammer J. A review of power output studies of Olympic and powerlifting: methodology, performance prediction, and evaluation tests. *J Strength Cond Res* 7: 76-89, 1993.
40. Gilbert G, Lees A, and Graham-Smith P. Temporal profile of post-tetanic potentiation of muscle force characteristics after repeated maximal exercise. *J Sport Sci* 19: 6, 2001.
41. Gonzalez-Badillo J and Sanchez-Medina L. Movement velocity as a measure of loading intensity in resistance training. *Int J Sports Med* 31: 347-352, 2010.
42. Gourgoulis V, Aggelousis N, Kasimatis P, Mavromatis G, and Garas A. Effect of a submaximal half-squats warm-up program on

- vertical jumping ability. *J Strength Cond Res* 17: 342-344, 2003.
43. Gullich A and Schmidtbleicher D. MVC-induced short-term potentiation of explosive force. *N Stud Athlet* 11: 67-81, 1996.
 44. Haff G, Burgess S, and Stone M. Cluster training: theoretical and practical applications for the strength and conditioning professional. *Prof Strength Cond* 12: 12-16, 2008.
 45. Haff G, Whitley A, McCoy L, O'Bryant H, Kilgore J, Haff E, Pierce K, and Stone M. Effects of different set configurations on barbell velocity and displacement during clean pull. *J Strength Cond Res* 17: 95-103, 2003.
 46. Hamada T, Sale D, MacDougall J, and Tarnopolsky MA. Interaction of fibre type, potentiation and fatigue in human knee extensor muscles. *Acta Physiol Scand* 178: 165-173, 2003.
 47. Hodgson M, Docherty D, and Robbins D. Post-activation potentiation: underlying physiology and implications for motor performance. *Sports Med* 35: 585-595, 2005.
 48. Hori N, Newton R, Nosaka K, and Stone M. Weightlifting exercises enhance athletic performance that requires high-load speed strength. *Strength and Cond J* 27: 50-55, 2005.
 49. Israel M, McBride J, Nuzzo J, Skinner J, and Dayne A. Kinetic and kinematic differences between squats performed with and without elastic bands. *J Strength Cond Res* 24: 190-194, 2010.
 50. Jandačka D and Beremlijski P. Determination of strength exercise intensities based on the load-power-velocity relationship. *J Hum Kinetics* 28: 33-44, 2011.
 51. Jeffreys I. A review of post activation potentiation and its application in strength and conditioning. *Prof Strength Cond* 12: 17-25, 2008.
 52. Jidovtseff B, Quievre J, Hanon C, and Crielaard J. Inertial muscular profiles allow a more accurate training load definition. *Sci and Sports* 24: 91-96, 2009.
 53. Joy J, Lowery P, Oliveira De Souza E, and Wilson J. Elastic bands as a component of periodized resistance training. *J Strength Cond Res* 30: 2100-2106, 2016.
 54. Kaneko M, Fuchimoto T, Toji H, and Sueti K. Training effects of different loads on the force-velocity relationship and mechanical power output in human muscle. *Scand J Sport Sci* 5: 50-55, 1983.
 55. Kawamori N and Haff G. The optimal training load for the development of muscular power. *J Strength Cond Res* 18: 675-684, 2004.
 56. Kilduff L, Bevan H, Kingsley M, Owen N, Bennett M, Bunce P, Hore A, Maw J, and Cunningham D. Postactivation potentiation in professional rugby players: optimal recovery. *J Strength Cond Res* 21: 1134-1138, 2007.
 57. Knudson D. Correcting the use of the term "power" in the strength and conditioning literature. *J Strength Cond Res* 23: 1902-1908, 2009.
 58. Komi P and Virmavirta M. Determinants of successful ski-jumping performance, in: *Biomechanics in Sport: Performance Enhancement and Injury Prevention*. Zatsiorsky V, ed. Oxford, UK: Blackwell Science, 2000, pp 349-362.
 59. Kraemer W and Looney D. Underlying mechanisms and physiology of muscular power. *Strength and Cond J* 34: 13-19, 2012.
 60. Kulig K, Andrews J, and Hay J. Human strength curves. *Exerc Sport Sci Rev* 12: 417-466, 1984.
 61. Kuntz C, Masi M, and Lorenz D. Augmenting the bench press with elastic resistance: scientific and practical applications. *Strength and Cond J* 36: 96-102, 2014.
 62. Lake J, Lauder M, Smith N, and Shorter K. A comparison of ballistic and nonballistic lower-body resistance exercise and the methods used to identify their positive lifting phases. *J Appl Biomech* 28: 431-437, 2012.
 63. Lanka J. Shot putting, in: *Biomechanics in Sport: Performance Enhancement and Injury Prevention*. Zatsiorsky V, ed. Oxford, UK: Blackwell Science, 2000, pp 435-457.
 64. Lyttle A, Wilson G, and Ostrowski K. Enhancing performance: maximal power versus combined weights and plyometric training. *J Strength Cond Res* 10, 1996.
 65. MacKenzie S, Lavers R, and Wallace B. A biomechanical comparison of the vertical jump, power clean, and jump squat. *J Sport Sci* 1632: 1576-1585, 2014.
 66. Maio Alves J, Rebelo A, Abrantes C, and Sampaio J. Short-term effects of complex and contrast training in soccer players' vertical jump, sprint, and agility abilities. *J Strength Cond Res* 24: 936-941, 2010.
 67. Markovic G and Jaric S. Positive and negative loading and mechanical output in maximum vertical jumping. *Med Sci Sports Exerc* 39: 1757-1764, 2007.
 68. Markovic G, Vuk S, and Jaric S. Effects of jump training with negative versus positive loading on jumping mechanics. *Int J Sports Med* 32: 365-372, 2011.
 69. McBride J, Triplett-McBride N, Davie A, and Newton M. The effect of heavy- vs. light-load jump squats on the development of strength, power, and speed. *J Strength Cond Res* 16: 72-82, 2002.
 70. McMaster D, Cronin J, and McGuigan M. Forms of variable resistance training. *J Strength Cond Res* 31: 50-64, 2009.
 71. McMaster D, Cronin J, and McGuigan M. Quantification of rubber and chain-based resistance modes. *J Strength Cond Res* 24: 2056-2064, 2010.
 72. Mero A and Komi P. Force-, EMG-, and elasticity-velocity relationships at submaximal, maximal and supramaximal running speeds in sprinters. *Eur J Appl Physiol Occup Physiol* 55: 553-561, 1986.
 73. Miller D. Springboard and platform diving, in: *Biomechanics in Sport: Performance Enhancement and Injury Prevention*. Zatsiorsky V, ed. Oxford, UK: Blackwell Science, 2000, pp 326-348.
 74. Neelly K, Terry J, and Morris M. A mechanical comparison of linear and double-looped hung supplemental heavy chain resistance to the back squat: a case study. *J Strength Cond Res* 24: 278-281, 2010.
 75. Newton R and Kraemer W. Developing explosive muscular power: implications for a mixed methods training strategy. *Strength and Cond J* 16: 20-31, 1994.
 76. Newton R, Kraemer W, and Hakkinen K. Effects of ballistic training on preseason preparation of elite volleyball players. *Med Sci Sports Exerc* 31: 323-330, 1999.
 77. Newton R, Kraemer W, Hakkinen K, Humphries B, and Murphy A. Kinematics, kinetics, and muscle activation during explosive upper body movements. *J Appl Biomech* 12: 31-43, 1996.
 78. Newton R, Murphy A, Humphries B, Wilson G, Kraemer W, and Hakkinen K. Influence of load and stretch shortening cycle on the kinematics, kinetics and muscle activation that occurs during explosive bench press throws. *Eur J Appl Physiol Occup Physiol*

- 75: 333-342, 1997.
79. Paasuke M, Ereline J, and Gapeyeva H. Twitch potentiation capacity of plantar-flexor muscles in endurance and power athletes. *Biol Sport* 15: 171-178, 1996.
 80. Pereria M and Gomes P. Movement velocity in resistance training. *Sports Med* 33: 427-438, 2003.
 81. Pipes T. Variable resistance versus constant resistance strength training in adult males. *Eur J Appl Physiol Occup Physiol* 39: 27-35, 1978.
 82. Radcliffe J and Radcliffe J. Effects of different warm-up protocols on peak power output during a single response jump task. *Med Sci Sports Exerc* 38: S189, 1999.
 83. Rajamohan G, Kanagasabai P, Krishnaswamy S, and Balakrishnan A. Effect of complex and contrast resistance and plyometric training on selected strength and power parameters. *J Exp Sciences* 1: 1-12, 2010.
 84. Ramirez J, Nunez V, Lancho C, Poblador M, and Lancho J. Velocity based training of lower limb to improve absolute and relative power outputs in concentric phase of half-squat in soccer players. *J Strength Cond Res*, 29: 3084-3088, 2015.
 85. Randell A, Cronin J, Keogh J, Gill N, and Pedersen M. Effect of instantaneous performance feedback during 6 weeks of velocity-based resistance training on sport-specific performance tests. *J Strength Cond Res* 25: 87-93, 2011.
 86. Rhea M, Kenn J, and Dermody B. Alterations in speed of squat movement and the use of accommodated resistance among college athletes training for power. *J Strength Cond Res* 23: 2645-2650, 2009.
 87. Robbins D. Postactivation potentiation and its practical applicability: a brief review. *J Strength Cond Res* 19: 453-458, 2005.
 88. Sale D. Postactivation potentiation: role in human performance. *Exerc Sport Sci Rev* 30: 138-143, 2002.
 89. Seitz L, Trajano G, Dal Maso F, Haff G, and Blazevich A. Postactivation potentiation during voluntary contractions after continued knee extensor task-specific practice. *Appl Physiol Nutr Metab* 40: 230-237, 2015.
 90. Shea C, Kohl R, Guadagnoli M, and Shebilske W. After-contraction phenomenon: influences on performance and learning. *J Mot Behav* 23: 51-62, 1991.
 91. Sheppard J, Dingley A, Janssen I, Spratford W, Chapman D, and Newton R. The effect of assisted jumping on vertical jump height in high-performance volleyball players. *J Sci Med Sport* 14: 85-89, 2011.
 92. Soria-Gila M, Chiroso I, Bautista I, Chiroso L, and Salvador B. Effects of variable resistance training on maximal strength: a meta-analysis. *J Strength Cond Res*, 29: 3260-3270, 2015.
 93. Sotiropoulos K, Smilios I, Douda H, Chritou M, and Tokmakidis S. Contrast loading: power output and rest interval effects on neuromuscular performance. *Int J Sports Physiol Perf* 9: 567-574, 2014.
 94. Stone M, O'Bryant H, McCoy L, Coglianese R, Lehmkuhl M, and Schilling B. Power and maximal strength relationships during performance of dynamic and static weighted jumps. *J Strength Cond Res* 17: 140-147, 2003.
 95. Stone M, Sanborn K, O'Bryant H, Hartman M, Stone M, Proulx C, Ward B, and Hruby J. Maximal strength-power-performance relationships in collegiate throwers. *J Strength Cond Res* 17: 739-745, 2003.
 96. Stone M, Sands W, Pierce K, Ramsey M, and Haff G. Power and power potentiation among strength power athletes: preliminary study. *Int J Sports Physiol Perf* 3: 55-67, 2008.
 97. Stone M, Stone M, and Sands W. Principles and Practice of Resistance Training. Champaign, IL: Human Kinetics, 2007.
 98. Thomas K, French D, and Hayes P. The effects of two plyometric training techniques on muscular power and agility in youth soccer players. *J Strength Cond Res* 23: 332-335, 2009.
 99. Tillin N and Bishop D. Factors modulating post-activation potentiation and its effect on performance of subsequent explosive activities. *Sports Med* 39: 147-166, 2009.
 100. Turner A. Training for power: principles and practice. *Prof Strength Cond* 14: 20-32, 2009.
 101. Verkhoshansky Y and Tatyana V. Speed-strength preparation for future champions. *Logkaya Atletika* 2: 2-13, 1973.
 102. Verkhoshansky Y and Verkhoshansky N. Special strength training manual for coaches. Verkhoshansky.com, 2011.
 103. Wallace B, Winchester J, and McGuigan M. Effects of elastic bands on force and power characteristics during the back squat exercise. *J Strength Cond Res* 20: 268-272, 2006.
 104. Wilson G, Murphy A, and Walshe A. Performance benefits from weight and plyometric training: effects of initial strength level. *Coaching Sport Sci J* 2: 3-8, 1997.
 105. Young W, Newton R, Murphy A, and Humphries B. The optimal training load for the development of dynamic athletic performance. *Med Sci Sports Exerc* 23: 1279-1286, 1993.
 106. Wilson J and Kritiz M. Practical guidelines and considerations for the use of elastic bands in strength and conditioning. *Strength and Cond J* 36: 1-9, 2014.
 107. Young W, Jenner A, and Griffiths K. Acute enhancement of power performance from heavy load squats. *J Strength Cond Res* 12: 82-84, 1998.
 108. Zatsiorsky V. Studies of motion and motor abilities of sportsmen, in: Biomechanics IV. Nelson R, Morehouse C, eds. Baltimore: University Park Press, 1974, pp 273-275.
 109. Zatsiorsky V and Kraemer W. Science and Practice of Strength Training. Champaign, IL: Human Kinetics, 1995.
 110. Zepeda P and Gonzalez J. Complex training: three weeks pre-season conditioning in Division I female basketball players. *J Strength Cond Res* 14: 372, 2000.

Chapter 9

1. Argus CK, Gill ND, Keogh JW, McGuigan MR, and Hopkins WG. Effects of two contrast training programs on jump performance in rugby union players during a competition phase. *Int J Sports Physiol Perform* 7: 68-75, 2012.
2. Bradbury JC and Forman SL. The impact of pitch counts and days of rest on performance among major-league baseball pitchers. *J Strength Cond Res* 26: 1181-1187, 2012.
3. Kilduff LP, Finn CV, Baker JS, Cook CJ, and West DJ. Preconditioning strategies to enhance physical performance on the day of competition. *Int J Sports Physiol Perform* 8: 677-681, 2013.
4. Newton RU, Rogers RA, Volek JS, Hakkinen K, and Kraemer WJ. Four weeks of optimal load ballistic resistance training at the end of season attenuates declining jump performance of women volleyball players. *J Strength Cond Res* 20: 955-961, 2006.

Chapter 10

1. Aagaard P and Andersen JL. Effects of strength training on endurance capacity in top-level endurance athletes. *Scand J Med Sci*

- Sports 20 Suppl 2: 39-47, 2010.
2. Beattie K, Kenny IC, Lyons M, and Carson BP. The effect of strength training on performance in endurance athletes. *Sports Med* 44: 845-865, 2014.
 3. Bullock N, Martin DT, Ross A, Rosemond D, Holland T, and Marino FE. Characteristics of the start in women's World Cup skeleton. *Sports Biomech* 7: 351-360, 2008.
 4. Kilduff LP, Finn CV, Baker JS, Cook CJ, and West DJ. Preconditioning strategies to enhance physical performance on the day of competition. *Int J Sports Physiol Perform* 8: 677-681, 2013.
 5. Lawton TW, Cronin JB, and McGuigan MR. Strength testing and training of rowers: a review. *Sports Med* 41: 413-432, 2011.
 6. Parchmann CJ and McBride JM. Relationship between functional movement screen and athletic performance. *J Strength Cond Res* 25: 3378-3384, 2011.
 7. Ronnestad BR, Kojedal O, Losnegard T, Kvamme B, and Raaftad T. Effect of heavy strength training on muscle thickness, strength, jump performance, and endurance performance in well-trained Nordic Combined athletes. *Eur J Appl Physiol Occup Physiol* 112: 2341-2352, 2012.