References

Chapter 1 Rationale and Considerations for Training Special Populations

1. Alexander, NB, Galecki, AT, Grenier, ML, Nyquist, LV, Hofmeyer, MR, Grunawalt, JC, Medell, JL, and Fry-Welch, D. Task-specific resistance training to improve the ability of activities of daily living-impaired older adults to rise from a bed and from a chair. *J Am Geriatr Soc* 49:1418-1427, 2001.
2. Arias, E. United States life tables, 2009. In *National Vital Statistics Reports*. Hyattsville, MD: National Center for Health Statistics, 7, 2009.
3. Armstrong, MJ and Sigal, RJ. Exercise as medicine: key concepts in discussing physical activity with patients who have Type 2 diabetes. *Can J Diabetes* 2671:747-749, 2015.
4. Beaulieu, L, Butterfield, SA, and Mason, CA. Physical activity and U.S. public elementary schools: implications for our profession. *ICHPER-SD Journal of Research* 7:13-16, 2012.
5. Benavent-Caballer, V, Rosado-Calatayud, P, Segura-Orti, E, Amer-Cuenca, JJ, and Lison, JF. Effects of three different low-intensity exercise interventions on physical performance, muscle CSA and activities of daily living: a randomized controlled trial. *Exp Gerontol* 58:159-165, 2014.
6. Booth, FW, Roberts, CK, and Laye, MJ. Lack of exercise is a major cause of chronic diseases. *Compr Physiol* 2:1143-1211, 2014.
7. Brownson, RC, Boehmer, TK, and Luke, DA. Declining rates of physical activity in the United States: what are the contributors? *Annu Rev Public Health* 26:421-443, 2005.
8. Caban-Martinez, AJ, Courtney, TK, Chang, W, Lombardi, DA, Huang, Y, Brennan, MJ, Perry, MJ, Katz, KN, Christiani, DC, and Verma, SK. Leisure-time physical activity, falls, and fall injuries in middle-aged adults. *Am J Prev Med* 49:888-901, 2015.
9. Census Bureau. *Current Population Reports*. Washington, DC: Department of Commerce, 2010.
10. Centers for Disease Control and Prevention. Overcoming Barriers to Physical Activity. 2011. www.cdc.gov/physicalactivity/basics/adding-pa/barriers.html. Accessed January 31, 2017.
11. Centers for Disease Control and Prevention. *National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States, 2014*. Atlanta: U.S. Department of Health and Human Services, 2014.
12. Centers for Disease Control and Prevention. NCHS data on obesity. 2014. www.cdc.gov/nchs/data/factsheets/factsheet_obesity.htm. Accessed May 2014.
13. Department of Health and Human Services. *Physical Activity Guidelines for Americans*. Washington, DC: U.S. Department of Health and Human Services, 2008.
14. Department of Justice. *The 2010 ADA Standards for Accessible Design*. Washington, DC: U.S. Department of Justice, 2010.
15. Diaz, KM and Shimbo, D. Physical activity and the prevention of hypertension. *Curr Hypertens Rep* 15:659-668, 2013.
16. Donnelly, JE, Blair, SN, Jakicic, JM, Manore, MM, Rankin, JW, and Smith, BK. Appropriate physical activity intervention strategies for weight loss and prevention of weight regain for adults. *Med Sci Sports Exerc* 41:459-469, 2009.
17. Finkelstein, EA, Trogdon, JG, Cohen, JW, and Dietz, W. Annual medical spending attributable to obesity: payer- and service-specific estimates. *Health Aff (Millwood)* 28:w822-w831, 2009.
18. Frank, L, Andresen, MA, and Schmid, TL. Obesity relationships with community design, physical activity, and time spent in cars. *Am J Prev Med* 27:87-96, 2004.
19. Frumkin, H. Urban sprawl and public health. *Public Health Rep* 117:201-217, 2002.
20. Heath, GW and Fentem, PH. Physical activity among persons with disabilities--a public health perspective. *Exerc Sport Sci Rev* 26:195-234, 1997.
21. Herman, WH. The economic costs of diabetes: is it time for a new treatment paradigm? *Diabetes Care* 6:775-776, 2013.
22. Hogan, CL, Mata, J, and Carstensen, LL. Exercise holds immediate benefits for affect and cognition in younger and older adults. *Psychol Aging* 28:587-594, 2013.
23. Jacobsen, LA, Kent, M, Lee, M, and Mather, M. America's aging population. *Popul Bull* 66, 2011.
24. Kinsella, KG. Changes in life expectancy 1900–1990. *Am J Clin Nutr* 55:1196S-1202S, 1992.
25. Knight, JA. Physical inactivity: associated diseases and disorders. *Ann Clin Lab Sci* 42:320-337, 2012.
26. Lee, MA and Mather, M. U.S. labor force trends. *Popul Bull* 63, 2008.
27. Levine, MA. Assessing bone health in children and adolescents. *Ind J Endocrin Metab* 16:S205-S212, 2012.
28. Manson, JE, Skerrett, PJ, Greenland, P, and VanItallie, TB. The escalating pandemics of obesity and sedentary lifestyle. A call to action for clinicians. *Arch Intern Med* 164:249-258, 2004.
29. McDonnell, MN, Hillier, SL, Hooker, SP, Le, A, Judd, SE, and Howard, VJ. Physical activity frequency and risk of incident stroke in a national US study of blacks and whites. *Stroke* 44:2519-2524, 2013.

30. McGovern, JN. *Recreation Access Rights Under the ADA*. Bloomington, IN: National Center on Accessibility, 2014.
31. Ogden, CL, Carroll, MD, Kit, BK, and Flegal, KM. Prevalence of childhood and adult obesity in the United States, 2011-2012. *JAMA* 311:806-814, 2014.
32. Okubo, Y, Schoene, D, and Lord, SR. Step training improves reaction time, gait and balance and reduces falls in older people: a systematic review and meta-analysis. *Br J Sports Med*, 2015. [e-pub ahead of print].
33. Rimmer, JH. Promoting inclusive physical activity communities for people with disabilities. *Res Dig Pres Counc Phys Fit Sports* 9:1-8, 2008.
34. Rosenberg, DE, Bombardier, CH, Hoffman, JM, and Belza, B. Physical activity among persons aging with mobility disabilities: shaping a research agenda. *J Aging Res* 2011:708510, 2011.
35. Sarzynski, M, Burton, J, Rankinen, T, Blair, S, Church, T, Despres, J, Hagberg, J, Lander-Ramos, R, Leon, A, Mikus, C, Rao, D, Seip, R, Skinner, J, Slentz, C, Thompson, P, Wilund, K, Kraus, W, and Bouchard, C. The effects of exercise on lipoprotein profile: a meta-analysis of 10 interventions. *Atherosclerosis* 243:364-372, 2015.
36. Takahashi, S. Facility and equipment layout and maintenance. In *NSCA's Essentials of Personal Training*. Coburn, JW, and Malek, MH, eds. Champaign, IL: Human Kinetics, 2012.
37. Thyfault, JP and Booth, FW. Lack of regular physical exercise or too much inactivity. *Curr Opin Clin Nutr Metab Care* 14:374-378, 2011.
38. Vincent, GK and Velcoff, VA. *The Next Four Decades: The Older Population in the United States: 2010 to 2050*. Washington, DC: U.S. Census Bureau, 2010.
39. Warburton, DER, Nicol, CW, and Bredin, SSD. Health benefits of physical activity: the evidence. *CMAJ* 174:801-809, 2006.
40. Ward, B, Schiller, J, and Goodman, R. Multiple chronic conditions among US adults: a 2012 update. *Prev Chronic Dis* 11:130389, 2014.
41. Warren, TY, Barry, V, Hooker, SP, Sui, X, Church, TS, and Blair, SN. Sedentary behaviors increase risk of cardiovascular disease mortality in men. *Med Sci Sports Exerc* 42:879-885, 2010.
42. Zafari, AM and Mackie, BD. Physical activity and the metabolic syndrome. *Hosp Physician* 42:26-38, 2006.

Chapter 2 Health Appraisal and Fitness Assessments

1. Albert, CM, Mittleman, MA, Chae, CU, Lee, IM, Hennekens, CH, and Manson, JE. Triggering of sudden death from cardiac causes by vigorous exertion. *N Engl J Med* 343:1355-1361, 2000.
2. American College of Sports Medicine. *ACSM's Guidelines for Exercise Testing and Prescription*. 9th ed. Baltimore: Lippincott Williams & Wilkins, 40-57, 2014.
3. American Thoracic Society and American College of Chest Physicians. American Thoracic Society/American College of Chest Physicians statement on cardiopulmonary exercise testing. *Am J Respir Crit Care Med* 167:211-277, 2003.
4. Balady, GJ, Weiner, DA, Rose, L, and Ryan, TJ. Physiologic responses to arm ergometry exercise relative to age and gender. *J Am Coll Cardiol* 16:130-135, 1990.
5. Balke, B and Ware, RW. An experimental study of physical fitness of Air Force personnel. *U S Armed Forces Med J* 10:675-688, 1959.
6. Billinger, SA, Loudon, JK, and Gajewski, BJ. Validity of a total body recumbent stepper exercise test to assess cardiorespiratory fitness. *J Strength Cond Res* 22:1556-1562, 2008.
7. Billinger, SA, Swearingen, E, McClain, M, Lentz, AA, and Good, MB. Recumbent stepper submaximal exercise test to predict peak oxygen uptake. *Med Sci Sports Exerc* 44:1539-1544, 2012.
8. Bovend'Eerdt, TJH, Botell, RE, and Wade, DT. Writing SMART rehabilitation goals and achieving goal attainment scaling: a practical guide. *Clin Rehabil* 23:352-361, 2009.
9. Bruce, RA, Kusumi, F, and Hosmer, D. Maximal oxygen intake and nomographic assessment of functional aerobic impairment in cardiovascular disease. *Am Heart J* 85:546-562, 1973.
10. Buchfuhrer, MJ, Hansen, JE, Robinson, TE, Sue, DY, Wasserman, K, and Whipp, BJ. Optimizing the exercise protocol for cardiopulmonary assessment. *J Appl Physiol* 55:1558-1564, 1983.
11. Centers for Disease Control and Prevention. Death and Mortality. National Center for Health Statistics FastStats. www.cdc.gov/nchs/fastats/deaths.htm. Accessed December 22, 2016.
12. U.S. Department of Health and Human Services. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. 2004, p 12.
13. Dahabreh, IJ and Paulus, JK. Association of episodic physical and sexual activity with triggering of acute cardiac events: systemic review and meta-analysis. *JAMA* 305:1225-1233, 2011.
14. Evetovich, TK and Hinnerichs, KR. Client consultation and health appraisal. In *NSCA's Essentials of Personal Training*. 2nd ed. Coburn, JW, and Malek, MH, eds. Champaign, IL: Human Kinetics, 147-163, 178, 2012.
15. Faigenbaum, AD. Age and sex-related differences and their implications for resistance training. In *Essentials of Strength Training and Conditioning*. 3rd ed. Baechle, TR, and Earle, RW, eds. Champaign, IL: Human Kinetics, 141-158, 2008.
16. Franklin, BA and McCullough, PA. Cardiovascular fitness: an independent and additive marker of risk stratification and health outcomes. *Mayo Clin Proc* 84:776-779, 2009.

17. Golding, LA. *YMCA Fitness Testing and Assessment Manual*. Champaign, IL: Human Kinetics, 2000.

18. Gordon, SMBS. Health appraisal in the non-medical setting. In *ACSM's Resource Manual for Guidelines for Exercise Testing and Prescription*. 2nd ed. Durstine JL, ed. Philadelphia: Williams & Wilkins, 219-228, 1993.

19. Hambrecht, RP, Schuler, GC, Muth, T, Grunze, MF, Marburger, CT, Niebauer, J, Methfessel, SM, and Kubler, W. Greater diagnostic sensitivity of treadmill versus cycle exercise testing of asymptomatic men with coronary artery disease. *Am J Cardiol* 70:141-146, 1992.

20. Hatfield, BD and Kaplan, P. Exercise psychology for the personal trainer. In *NSCA's Essentials of Personal Training*. 2nd ed. Coburn, JW, and Malek, MH, eds. Champaign, IL: Human Kinetics, 125-144, 2012.

21. Herbert, DL. Legal aspects of personal training. In *NSCA's Essentials of Personal Training*. 2nd ed. Coburn, JW, and Malek, MH, eds. Champaign, IL: Human Kinetics, 623-633, 2012.

22. Heyward, VH and Gibson, AL. *Advanced Fitness Assessment and Exercise Prescription*. 7th ed. Champaign, IL: Human Kinetics, 23-44, 79-118, 219-265, 305-324, 2014.

23. Hollingsworth, V, Bendick, P, Franklin, B, Seymour, G, and Timmis, GC. Validity of arm ergometer blood pressures immediately after exercise. *Am J Cardiol* 65:1358-1360, 1990.

24. Iverson, GL and Koehle, MS. Normative data for the balance error scoring system in adults. *Rehabil Res Pract* 2013:846418, 2013.

25. Jamnik, VK, Warburton, DE, Makarski, J, McKenzie, DC, Shephard, RJ, Stone, JA, Charlesworth, S, and Gledhill, N. Enhancing the effectiveness of clearance for physical activity participation: background and overall process. *Appl Physiol Nutr Metab* 36(suppl 1):S3-S13, 2011.

26. Kaminsky, LA and Whaley, MH. Evaluation of a new standardized ramp protocol: the BSU/Bruce Ramp Protocol. *J Cardiopulm Rehabil* 18:438-444, 1998.

27. Locke, EA and Latham, GP. Building a practically useful theory of goal setting and task motivation. *Am Psychol* 57:705-717, 2002.

28. McGuigan, M. Administration, scoring, and interpretation of selected tests. In *Essentials of Strength Training and Conditioning*. 4th ed. Haff, GG, and Triplett, NT, eds. Champaign, IL: Human Kinetics, 259-294, 2016.

29. McInnis, KJ and Balady, GJ. Higher cardiovascular risk clients in health clubs: an overview of new guidelines from the AHA and the ACSM on risk screening, emergency procedures, and staffing at health/fitness facilities. *ACSMs Health Fit J* 3(1):19-24, 1999.

30. Moore, GE, Marsh, AP, and Durstine, JL. Approach to exercise and disease. In *ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities*. 3rd ed. Durstine, JL, Moore, GE, Painter, PL, and Roberts, SO, eds. Champaign, IL: Human Kinetics, 12-17, 2013.

31. Morrow Jr, JR, Mood, D, Disch, J, and Kang, M. *Measurement and Evaluation in Human Performance*. 4th ed. Champaign, IL: Human Kinetics, 2011.

32. Myers, J, Buchanon, N, Smith, D, Neutel, J, Bowes, E, Walsh, D, and Froelicher, VF. Individualization ramp treadmill. Observations on a new protocol. *Chest* 101:2365- 2415, 1992.

33. Myers, J, Buchanon, N, Walsh, D, Kraemer, M, and McAuley, P. Comparison of the ramp versus standard exercise protocols. *J Am Coll Cardiol* 17:1334-1342, 1991.

34. Pollock, ML, Schmidt, DH, and Jackson, AS. Measurement of cardio-respiratory fitness and body composition in a clinical setting. *Comp Ther* 6:12-27, 1980.

35. Rana, S and White, JB. Fitness assessment selection and administration. In *NSCA's Essentials of Personal Training*. 2nd ed. Coburn, JW, and Malek, MH, eds. Champaign, IL: Human Kinetics, 147-163, 2012.

36. Riebe, D, Franklin, BA, Thompson, PD, Garber, CE, Whitfield, GP, Magal, M, and Pescatello, LS. Updating ACSM's recommendations for exercise preparticipation health screening. *Med Sci Sports Exerc* 47:2473-2479, 2015.

37. Riemann, BL, Guskiewicz, KM, and Shields, EW. Relationship between clinical and forceplate measures of postural stability. *J Sport Rehabil* 8:71-82, 1999.

38. Rikli, RE and Jones, CJ. *Senior Fitness Test Manual*. 2nd ed. Champaign, IL: Human Kinetics, 18, 64-77, 154, 2013.

39. Rodgers, WM and Loitz, CC. The role of motivation in behavior change: how do we encourage our clients to be active? *ACSMs Health Fit J* 13:7-12, 2009.

40. Ryan, ED and Cramer, JT. Fitness testing protocols and norms. In *NSCA's Essentials of Personal Training*. 2nd ed. Coburn, JW, and Malek, MH, eds. Champaign, IL: Human Kinetics, 201-232, 2012.

41. Thompson, PD, Franklin, BA, Balady, GJ, Blair, SN, Corrado, D, Estes, NA, Fulton, JE, Gordon, NF, Haskell, WL, Link, MS, Maron, MA, American Heart Association Council on Nutrition, Physical Activity and Metabolism, American Heart Association Council on Clinical Cardiology, and American College of Sports Medicine. Exercise and acute cardiovascular events placing the risks into perspective: a scientific statement from the American Heart Association Council on Nutrition, Physical Activity, and Metabolism and the Council on Clinical Cardiology. *Circulation* 115:2358-2368, 2007.

42. Warburton, DER, Gledhill, N, Jamnik, VK, Bredin, SSD, Mckenzie, DC, Stone, J, Charlesworth, S, and Shepard, RJ. Evidence-based risk assessment and recommendations for physical activity clearance: consensus document. *Appl Physiol Nutr Metab* 36:S266-S298, 2011.

43. Ward, BW, Schiller, JS, and Goodman, RA. Multiple chronic conditions among US adults: a 2012 update. *Prev Chronic Dis* 11:130389, 2014.

44. Welk, GJ and Meredith, MD. Factors that influence physical fitness in children and adolescents. In *FITNESSGRAM/ACTIVITYGRAM Reference Guide*. Pangrazi, RP, and Corbin, CB, eds. Dallas: The Cooper Institute, 52-60, 2008.

Chapter 3 Musculoskeletal Conditions and Disorders

1. Airaksinen, O, Brox, JI, Cedraschi, C, Hildebrandt, J, Klaber-Moffett, J, Kovacs, F, Mannion, AF, Reis, S, Staal, JB, Ursin, H, and Zanoli, G. Chapter 4. European guidelines for the management of chronic nonspecific low back pain. *Eur Spine J* 15(suppl 2):S192-S300, 2006.

2. Allen, GJ, Hartl, TL, Duffany, S, Smith, SF, VanHeest, JL, Anderson, JM, Hoffman, JR, Kraemer, WJ, and Maresh, CM. Cognitive and motor function after administration of hydrocodone bitartrate plus ibuprofen, ibuprofen alone, or placebo in healthy subjects with exercise-induced muscle damage: a randomized, repeated-dose, placebo-controlled study. *Psychopharmacology (Berl)* 166:228-233, 2003.

3. Altman, RD and Barthel, HR. Topical therapies for osteoarthritis. *Drugs* 71:1259-1279, 2011.

4. American Academy of Orthopaedic Surgeons. Elbow Dislocation. 2007. http://orthoinfo.aaos.org/topic.cfm?topic=A00029. Accessed January 6, 2017.

5. American Academy of Orthopaedic Surgeons. Osteoarthritis. 2007. http://orthoinfo.aaos.org/topic.cfm?topic=a00227. Accessed April 25, 2015.

6. American Academy of Orthopaedic Surgeons. Foot and Ankle Conditioning Program. 2012. http://orthoinfo.aaos.org/topic.cfm?topic=A00667. Accessed January 6, 2017.

7. American Academy of Orthopaedic Surgeons. Rotator Cuff and Shoulder Conditioning Program. 2012. http://orthoinfo.aaos.org/topic.cfm?topic=A00663. Accessed January 6, 2017.

8. American Academy of Orthopaedic Surgeons and American Orthopaedic Foot and Ankle Society. Sprained Ankle. 2012. http://orthoinfo.aaos.org/topic.cfm?topic=a00150. Accessed January 6, 2017.

9. American College of Rheumatology Subcommittee on Osteoarthritis. Recommendations for the medical management of osteoarthritis of the hip and knee: 2000 update. *Arthritis Rheum* 43:1905-1915, 2000.

10. American Geriatrics Society Panel on Exercise and Osteoarthritis. Exercise prescription for older adults with osteoarthritis pain: consensus practice recommendations. A supplement to the AGS Clinical Practice Guidelines on the management of chronic pain in older adults. *J Am Geriatr Soc* 49:808-823, 2001.

11. Anwer, S and Alghadir, A. Effect of isometric quadriceps exercise on muscle strength, pain, and function in patients with knee osteoarthritis: a randomized controlled study. *J Phys Ther Sci* 26:745-748, 2014.

12. Balady, G, Berra, K, Goldling, L, Gordon, N, Mahler, D, Myers, J, and Sheldahl, L. General principles of exercise prescription. In *ACSM's Guidelines for Exercise Testing and Prescription*. Franklin, B, Whaley, M, Howley, E, and Balady, G, eds. Philadelphia: Lippincott Williams & Wilkins, 137-164, 2000.

13. Bansal, S, Katzman, WB, and Giangregorio, LM. Exercise for improving age-related hyperkyphotic posture: a systematic review. *Arch Phys Med Rehabil* 95:129-140, 2014.

14. Bayles, C, Chan, S, and Robare, J. Frailty. In *ACSM's Exercise Management for Persons With Chronic Diseases and Disabilities*. Durstine, J, Moore, G, Painter, P, and Roberts, S, eds. Champaign, IL: Human Kinetics, 201-208, 2009.

15. Bean, JF, Leveille, SG, Kiely, DK, Bandinelli, S, Guralnik, JM, and Ferrucci, L. A comparison of leg power and leg strength within the InCHIANTI study: which influences mobility more? *J Gerontol A Biol Sci Med Sci* 58:728-733, 2003.

16. Beaudart, C, Rizzoli, R, Bruyere, O, Reginster, JY, and Biver, E. Sarcopenia: burden and challenges for public health. *Arch Public Health* 72:45, 2014.

17. Been, E and Kalichman, L. Lumbar lordosis. *Spine J* 14:87-97, 2014.

18. Blume, SW and Curtis, JR. Medical costs of osteoporosis in the elderly Medicare population. *Osteoporos Int* 22:1835-1844, 2011.

19. Boachie-Adjei, O and Lonner, B. Spinal deformity. *Pediatr Clin North Am* 43:883-897, 1996.

20. Bolton, KL, Egerton, T, Wark, J, Wee, E, Matthews, B, Kelly, A, Craven, R, Kantor, S, and Bennell, KL. Effects of exercise on bone density and falls risk factors in post-menopausal women with osteopenia: a randomised controlled trial. *J Sci Med Sport* 15:102-109, 2012.

21. Brandi, ML and Black, D. A drinkable formulation of alendronate: potential to increase compliance and decrease upper GI irritation. *Clin Cases Miner Bone Metab* 10:187-190, 2013.

22. Britnell, SJ, Cole, JV, Isherwood, L, Sran, MM, Britnell, N, Burgi, S, Candido, G, and Watson, L. Postural health in women: the role of physiotherapy. *J Obstet Gynaecol Can* 27:493-510, 2005.

23. Bruce, SA, Newton, D, and Woledge, RC. Effect of age on voluntary force and cross-sectional area of human adductor pollicis muscle. *Q J Exp Physiol* 74:359-362, 1989.

24. Buckinx, F, Rolland, Y, Reginster, JY, Ricour, C, Petermans, J, and Bruyere, O. Burden of frailty in the elderly population: perspectives for a public health challenge. *Arch Public Health* 73:19, 2015.

25. Buckwalter, JA, Saltzman, C, and Brown, T. The impact of osteoarthritis: implications for research. *Clin Orthop Relat Res*:S6-S15, 2004.

26. Burton, LA and Sumukadas, D. Optimal management of sarcopenia. *Clin Interv Aging* 5:217-228, 2010.

27. Cameron, M and Chrubasik, S. Topical herbal therapies for treating osteoarthritis. *Cochrane Database Syst Rev* 5:CD010538, 2013.

28. Carvalho, J, Marques, E, Soares, JM, and Mota, J. Isokinetic strength benefits after 24 weeks of multicomponent exercise training and combined exercise training in older adults. *Aging Clin Exp Res* 22:63-69, 2010.

29. Centers for Disease Control and Prevention. Public health and aging: trends in aging--United States and worldwide. *JAMA* 289:1371-1373, 2003.

30. Chau, DL, Walker, V, Pai, L, and Cho, LM. Opiates and elderly: use and side effects. *Clin Interv Aging* 3:273-278, 2008.

31. Chen, CY, Wu, SC, Chen, LJ, and Lue, BH. The prevalence of subjective frailty and factors associated with frailty in Taiwan. *Arch Gerontol Geriatr* 50(suppl 1):S43-S47, 2010.

32. Chesnut, CH, 3rd, Silverman, S, Andriano, K, Genant, H, Gimona, A, Harris, S, Kiel, D, LeBoff, M, Maricic, M, Miller, P, Moniz, C, Peacock, M, Richardson, P, Watts, N, and Baylink, D. A randomized trial of nasal spray salmon calcitonin in postmenopausal women with established osteoporosis: the prevent recurrence of osteoporotic fractures study. PROOF Study Group. *Am J Med* 109:267-276, 2000.

33. Chin, A, Paw, MJ, van Uffelen, JG, Riphagen, I, and van Mechelen, W. The functional effects of physical exercise training in frail older people: a systematic review. *Sports Med* 38:781-793, 2008.

34. Chou, CH, Hwang, CL, and Wu, YT. Effect of exercise on physical function, daily living activities, and quality of life in the frail older adults: a meta-analysis. *Arch Phys Med Rehabil* 93:237-244, 2012.

35. Clarke, BL and Khosla, S. Physiology of bone loss. *Radiol Clin North Am* 48:483-495, 2010.

36. Clegg, A, Young, J, Iliffe, S, Rikkert, MO, and Rockwood, K. Frailty in elderly people. *Lancet* 381:752-762, 2013.

37. Cooper, R, Naclerio, F, Allgrove, J, and Jimenez, A. Creatine supplementation with specific view to exercise/sports performance: an update. *J Int Soc Sports Nutr* 9:33, 2012.

38. Cosman, F, De Beur, SJ, LeBoff, MS, Lewiecki, EM, Tanner, B, Randall, S, and Lindsay, R. Clinician's guide to prevention and treatment of osteoporosis. *Osteoporos Int* 25:2359-2381, 2014.

39. Culham, EG, Jimenez, HA, and King, CE. Thoracic kyphosis, rib mobility, and lung volumes in normal women and women with osteoporosis. *Spine* 19:1250-1255, 1994.

40. Dagenais, S, Caro, J, and Haldeman, S. A systematic review of low back pain cost of illness studies in the United States and internationally. *Spine J* 8:8-20, 2008.

41. Delmonico, MJ, Kostek, MC, Doldo, NA, Hand, BD, Bailey, JA, Rabon-Stith, KM, Conway, JM, Carignan, CR, Lang, J, and Hurley, BF. Effects of moderate-velocity strength training on peak muscle power and movement velocity: do women respond differently than men? *J Appl Physiol (1985)* 99:1712-1718, 2005.

42. Dent, E, Chapman, I, Howell, S, Piantadosi, C, and Visvanathan, R. Frailty and functional decline indices predict poor outcomes in hospitalised older people. *Age Ageing* 43:477-484, 2014.

43. Di Iorio, A, Abate, M, Di Renzo, D, Russolillo, A, Battaglini, C, Ripari, P, Saggini, R, Paganelli, R, and Abate, G. Sarcopenia: age-related skeletal muscle changes from determinants to physical disability. *Int J Immunopathol Pharmacol* 19:703-719, 2006.

44. Dickinson, JM, Volpi, E, and Rasmussen, BB. Exercise and nutrition to target protein synthesis impairments in aging skeletal muscle. *Exerc Sport Sci Rev* 41:216-223, 2013.

45. Docking, RE, Fleming, J, Brayne, C, Zhao, J, Macfarlane, GJ, and Jones, GT. Epidemiology of back pain in older adults: prevalence and risk factors for back pain onset. *Rheumatology (Oxford)* 50:1645-1653, 2011.

46. Doherty, C, Delahunt, E, Caulfield, B, Hertel, J, Ryan, J, and Bleakley, C. The incidence and prevalence of ankle sprain injury: a systematic review and meta-analysis of prospective epidemiological studies. *Sports Med* 44:123-140, 2014.

47. Edmond, SL, Kiel, DP, Samelson, EJ, Kelly-Hayes, M, and Felson, DT. Vertebral deformity, back symptoms, and functional limitations among older women: the Framingham Study. *Osteoporos Int* 16:1086-1095, 2005.

48. Erickson, JM and Messer, TM. Glucosamine and chondroitin sulfate treatment of hand osteoarthritis. *J Hand Surg Am* 38:1638-1640, 2013.

49. Evans, WJ. Protein nutrition, exercise and aging. *J Am Coll Nutr* 23:601S-609S, 2004.

50. Evans, WJ and Campbell, WW. Sarcopenia and age-related changes in body composition and functional capacity. *J Nutr* 123:465-468, 1993.

51. Fairhall, N, Langron, C, Sherrington, C, Lord, SR, Kurrle, SE, Lockwood, K, Monaghan, N, Aggar, C, Gill, L, and Cameron, ID. Treating frailty--a practical guide. *BMC Med* 9:83, 2011.

52. Fiatarone, MA, Marks, EC, Ryan, ND, Meredith, CN, Lipsitz, LA, and Evans, WJ. High-intensity strength training in nonagenarians. Effects on skeletal muscle. *JAMA* 263:3029-3034, 1990.

53. Fielding, RA, Vellas, B, Evans, WJ, Bhasin, S, Morley, JE, Newman, AB, Abellan van Kan, G, Andrieu, S, Bauer, J, Breuille, D, Cederholm, T, Chandler, J, De Meynard, C, Donini, L, Harris, T, Kannt, A, Keime Guibert, F, Onder, G, Papanicolaou, D, Rolland, Y, Rooks, D, Sieber, C, Souhami, E, Verlaan, S, and Zamboni, M. Sarcopenia: an undiagnosed condition in older adults. Current consensus definition: prevalence, etiology, and consequences. International Working Group on Sarcopenia. *J Am Med Dir Assoc* 12:249-256, 2011.

54. Frankel, JE, Bean, JF, and Frontera, WR. Exercise in the elderly: research and clinical practice. *Clin Geriatr Med* 22:239-256; vii, 2006.

55. Franko, J, Kish, KJ, O'Connell, BG, Subramanian, S, and Yuschak, JV. Advanced age and preinjury warfarin anticoagulation increase the risk of mortality after head trauma. *J Trauma* 61:107-110, 2006.

56. Frontera, WR, Hughes, VA, Fielding, RA, Fiatarone, MA, Evans, WJ, and Roubenoff, R. Aging of skeletal muscle: a 12-yr longitudinal study. *J Appl Physiol (1985)* 88:1321-1326, 2000.

57. Fusco, C, Zaina, F, Atanasio, S, Romano, M, Negrini, A, and Negrini, S. Physical exercises in the treatment of adolescent idiopathic scoliosis: an updated systematic review. *Physiother Theory Pract* 27:80-114, 2011.

58. Garcia-Garcia, FJ, Carcaillon, L, Fernandez-Tresguerres, J, Alfaro, A, Larrion, JL, Castillo, C, and Rodriguez-Manas, L. A new operational definition of frailty: the Frailty Trait Scale. *J Am Med Dir Assoc* 15:e7-e371, 2014.

59. Geerts, WH, Bergqvist, D, Pineo, GF, Heit, JA, Samama, CM, Lassen, MR, and Colwell, CW. Prevention of venous thromboembolism: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). *Chest* 133:381S-453S, 2008.

60. Griggs, RC, Kingston, W, Jozefowicz, RF, Herr, BE, Forbes, G, and Halliday, D. Effect of testosterone on muscle mass and muscle protein synthesis. *J Appl Physiol (1985)* 66:498-503, 1989.

61. Grinspoon, S, Friedman, A, Miller, K, Lippman, J, Olson, W, and Warren, M. Effects of a triphasic combination oral contraceptive containing norgestimate/ethinyl estradiol on biochemical markers of bone metabolism in young women with osteopenia secondary to hypothalamic amenorrhea. *J Clin Endocrinol Metab* 88:3651-3656, 2003.

62. Harman, SM, Metter, EJ, Tobin, JD, Pearson, J, and Blackman, MR. Longitudinal effects of aging on serum total and free testosterone levels in healthy men. Baltimore Longitudinal Study of Aging. *J Clin Endocrinol Metab* 86:724-731, 2001.

63. Helmick, C and Watkins-Castillo, S. United States Bone and Joint Initiative: The Burden of Musculoskeletal Diseases in the United States (BMUS). 2014. www.boneandjointburden.org. Accessed May 25, 2015.

64. Henrotin, Y, Marty, M, and Mobasheri, A. What is the current status of chondroitin sulfate and glucosamine for the treatment of knee osteoarthritis? *Maturitas* 78:184-187, 2014.

65. Hochberg, MC, Altman, RD, April, KT, Benkhalti, M, Guyatt, G, McGowan, J, Towheed, T, Welch, V, Wells, G, and Tugwell, P. American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. *Arthritis Care Res (Hoboken)* 64:465-474, 2012.

66. Hoy, D, Bain, C, Williams, G, March, L, Brooks, P, Blyth, F, Woolf, A, Vos, T, and Buchbinder, R. A systematic review of the global prevalence of low back pain. *Arthritis Rheum* 64:2028-2037, 2012.

67. Hruda, KV, Hicks, AL, and McCartney, N. Training for muscle power in older adults: effects on functional abilities. *Can J Appl Physiol* 28:178-189, 2003.

68. Hubbard, RE, O'Mahony, MS, and Woodhouse, KW. Medication prescribing in frail older people. *Eur J Clin Pharmacol* 69:319-326, 2013.

69. Inouye, SK, Studenski, S, Tinetti, ME, and Kuchel, GA. Geriatric syndromes: clinical, research, and policy implications of a core geriatric concept. *J Am Geriatr Soc* 55:780-791, 2007.

70. Janssen, I, Shepard, DS, Katzmarzyk, PT, and Roubenoff, R. The healthcare costs of sarcopenia in the United States. *J Am Geriatr Soc* 52:80-85, 2004.

71. Jimbo, S, Kobayashi, T, Aono, K, Atsuta, Y, and Matsuno, T. Epidemiology of degenerative lumbar scoliosis: a community-based cohort study. *Spine* 37:1763-1770, 2012.

72. Jordan, JM, Helmick, CG, Renner, JB, Luta, G, Dragomir, AD, Woodard, J, Fang, F, Schwartz, TA, Abbate, LM, Callahan, LF, Kalsbeek, WD, and Hochberg, MC. Prevalence of knee symptoms and radiographic and symptomatic knee osteoarthritis in African Americans and Caucasians: the Johnston County Osteoarthritis Project. *J Rheumatol* 34:172-180, 2007.

73. Kanis, JA and McCloskey, EV. Risk factors in osteoporosis. *Maturitas* 30:229-233, 1998.

74. Kim, Y, Park, J, Lee, J, Kim, J, Yang, S, Jeon, D, Kim, M, Jeong, T, Lee, Y, and Rhee, B. Prevalence and risk factors of the osteoporosis of perimenopausal women in the community population. *Hanguk Uiyak* 62:11-24, 2002.

75. Klibanski, A, Adams-Campbell, L, Bassford, TL, Blair, SN, Boden, SD, Dickersin, K, Gifford, DR, Glasse, L, Goldring, SR, Hruska, K, and Johnson, SR. Osteoporosis prevention, diagnosis, and therapy. *JAMA* 285:785-795, 2001.

76. Knight, JA. Physical inactivity: associated diseases and disorders. *Ann Clin Lab Sci* 42:320-337, 2012.

77. Kralinger, FS, Golser, K, Wischatta, R, Wambacher, M, and Sperner, G. Predicting recurrence after primary anterior shoulder dislocation. *Am J Sports Med* 30:116-120, 2002.

78. Krishnan, GM and Thompson, PD. The effects of statins on skeletal muscle strength and exercise performance. *Curr Opin Lipidol* 21:324-328, 2010.

79. Kritz, M and Cronin, J. Static posture assessment screen of athletes: benefits and considerations. *Strength Cond J* 30:18-27, 2008.

80. Lamberts, SW, van den Beld, AW, and van der Lely, AJ. The endocrinology of aging. *Science* 278:419-424, 1997.

81. Latham, N and Liu, CJ. Strength training in older adults: the benefits for osteoarthritis. *Clin Geriatr Med* 26:445-459, 2010.
82. Lawrence, RC, Felson, DT, Helmick, CG, Arnold, LM, Choi, H, Deyo, RA, Gabriel, S, Hirsch, R, Hochberg, MC, Hunder, GG, Jordan, JM, Katz, JN, Kremers, HM, and Wolfe, F. Estimates of the prevalence of arthritis and other rheumatic conditions in the United States. Part II. *Arthritis Rheum* 58:26-35, 2008.
83. Lexell, J. Human aging, muscle mass, and fiber type composition. *J Gerontol A Biol Sci Med Sci* 50 Spec No:11-16, 1995.
84. Lisse, JR, MacDonald, K, Thurmond-Anderle, ME, and Fuchs, JE, Jr. A double-blind, placebo-controlled study of acetylsalicylic acid (ASA) in trained runners. *J Sports Med Phys Fitness* 31:561-564, 1991.
85. Litwic, A, Edwards, MH, Dennison, EM, and Cooper, C. Epidemiology and burden of osteoarthritis. *Br Med Bull* 105:185-199, 2013.
86. Liu, H, Bravata, DM, Olkin, I, Friedlander, A, Liu, V, Roberts, B, Bendavid, E, Saynina, O, Salpeter, SR, Garber, AM, and Hoffman, AR. Systematic review: the effects of growth hormone on athletic performance. *Ann Intern Med* 148:747-758, 2008.
87. Macaluso, A and De Vito, G. Muscle strength, power and adaptations to resistance training in older people. *Eur J Appl Physiol* 91:450-472, 2004.
88. Macfarlane, GJ, Beasley, M, Jones, EA, Prescott, GJ, Docking, R, Keeley, P, McBeth, J, and Jones, GT. The prevalence and management of low back pain across adulthood: results from a population-based cross-sectional study (the MUSICIAN study). *Pain* 153:27-32, 2012.
89. Maggio, M, Lauretani, F, and Ceda, GP. Sex hormones and sarcopenia in older persons. *Curr Opin Clin Nutr Metab Care* 16:3-13, 2013.
90. Malmstrom, TK, Miller, DK, and Morley, JE. A comparison of four frailty models. *J Am Geriatr Soc* 62:721-726, 2014.
91. Manson, JE, Chlebowski, RT, Stefanick, ML, Aragaki, AK, Rossouw, JE, Prentice, RL, Anderson, G, Howard, BV, Thomson, CA, LaCroix, AZ, Wactawski-Wende, J, Jackson, RD, Limacher, M, Margolis, KL, Wassertheil-Smoller, S, Beresford, SA, Cauley, JA, Eaton, CB, Gass, M, Hsia, J, Johnson, KC, Kooperberg, C, Kuller, LH, Lewis, CE, Liu, S, Martin, LW, Ockene, JK, O'Sullivan, MJ, Powell, LH, Simon, MS, Van Horn, L, Vitolins, MZ, and Wallace, RB. Menopausal hormone therapy and health outcomes during the intervention and extended poststopping phases of the Women's Health Initiative randomized trials. *JAMA* 310:1353-1368, 2013.
92. Marsh, AP, Miller, ME, Saikin, AM, Rejeski, WJ, Hu, N, Lauretani, F, Bandinelli, S, Guralnik, JM, and Ferrucci, L. Lower extremity strength and power are associated with 400-meter walk time in older adults: the InCHIANTI study. *J Gerontol A Biol Sci Med Sci* 61:1186-1193, 2006.
93. Martin, RL, Davenport, TE, Paulseth, S, Wukich, DK, and Godges, JJ. Ankle stability and movement coordination impairments: ankle ligament sprains. *J Orthop Sports Phys Ther* 43:A1-A40, 2013.
94. Mathews, AE, Laditka, SB, Laditka, JN, Wilcox, S, Corwin, SJ, Liu, R, Friedman, DB, Hunter, R, Tseng, W, and Logsdon, RG. Older adults' perceived physical activity enablers and barriers: a multicultural perspective. *J Aging Phys Act* 18:119-140, 2010.
95. Mayer, F and Dickhuth, H. FIMS Position Statement: Physical activity after total joint replacement. *Int SportMed J* 9:39-43, 2008.
96. Mayer, F, Scharhag-Rosenberger, F, Carlsohn, A, Cassel, M, Muller, S, and Scharhag, J. The intensity and effects of strength training in the elderly. *Dtsch Arztebl Int* 108:359-364, 2011.
97. Mentes, J. Oral hydration in older adults: greater awareness is needed in preventing, recognizing, and treating dehydration. *Am J Nurs* 106:40-49; quiz 50, 2006.
98. Metter, EJ, Conwit, R, Tobin, J, and Fozard, JL. Age-associated loss of power and strength in the upper extremities in women and men. *J Gerontol A Biol Sci Med Sci* 52:B267-B276, 1997.
99. Metter, EJ, Talbot, LA, Schrager, M, and Conwit, R. Skeletal muscle strength as a predictor of all-cause mortality in healthy men. *J Gerontol A Biol Sci Med Sci* 57:B359-B365, 2002.
100. Moreira, LD, Oliveira, ML, Lirani-Galvao, AP, Marin-Mio, RV, Santos, RN, and Lazaretti-Castro, M. Physical exercise and osteoporosis: effects of different types of exercises on bone and physical function of postmenopausal women. *Arq Bras Endocrinol Metabol* 58:514-522, 2014.
101. Mosti, MP, Carlsen, T, Aas, E, Hoff, J, Stunes, AK, and Syversen, U. Maximal strength training improves bone mineral density and neuromuscular performance in young adult women. *J Strength Cond Res* 28:2935-2945, 2014.
102. Mosti, MP, Kaehler, N, Stunes, AK, Hoff, J, and Syversen, U. Maximal strength training in postmenopausal women with osteoporosis or osteopenia. *J Strength Cond Res* 27:2879-2886, 2013.
103. Murphy, L and Helmick, CG. The impact of osteoarthritis in the United States: a population-health perspective: a population-based review of the fourth most common cause of hospitalization in U.S. adults. *Orthop Nurs* 31:85-91, 2012.
104. National Scoliosis Foundation. Scoliosis Information and Support. 2007. www.scoliosis.org/info.php. Accessed October 16, 2016.
105. National Strength and Conditioning Association. *Essentials of Strength Training and Conditioning.* 4th ed. Champaign, IL: Human Kinetics, 2016.
106. Neogi, T and Zhang, Y. Epidemiology of osteoarthritis. *Rheum Dis Clin North Am* 39:1-19, 2013.

107. Newman, AB, Lee, JS, Visser, M, Goodpaster, BH, Kritchevsky, SB, Tylavsky, FA, Nevitt, M, and Harris, TB. Weight change and the conservation of lean mass in old age: the Health, Aging and Body Composition Study. *Am J Clin Nutr* 82:872-878, 2005.

108. Nuesch, E, Dieppe, P, Reichenbach, S, Williams, S, Iff, S, and Juni, P. All cause and disease specific mortality in patients with knee or hip osteoarthritis: population based cohort study. *BMJ* 342:d1165, 2011.

109. O'Connell, MD and Wu, FC. Androgen effects on skeletal muscle: implications for the development and management of frailty. *Asian J Androl* 16:203-212, 2014.

110. Pahor, M, Guralnik, JM, Ambrosius, WT, Blair, S, Bonds, DE, Church, TS, Espeland, MA, Fielding, RA, Gill, TM, Groessl, EJ, King, AC, Kritchevsky, SB, Manini, TM, McDermott, MM, Miller, ME, Newman, AB, Rejeski, WJ, Sink, KM, and Williamson, JD. Effect of structured physical activity on prevention of major mobility disability in older adults: the LIFE study randomized clinical trial. *JAMA* 311:2387-2396, 2014.

111. Papageorgiou, AC, Croft, PR, Ferry, S, Jayson, MI, and Silman, AJ. Estimating the prevalence of low back pain in the general population. Evidence from the South Manchester Back Pain Survey. *Spine* 20:1889-1894, 1995.

112. Parise, G, Bosman, MJ, Boecker, DR, Barry, MJ, and Tarnopolsky, MA. Selective serotonin reuptake inhibitors: their effect on high-intensity exercise performance. *Arch Phys Med Rehabil* 82:867-871, 2001.

113. Percope de Andrade, M, Campos, T, and Abreu-E-Silva, G. Supplementary methods in the nonsurgical treatment of osteoarthritis. *Arthroscopy* 31:785-792, 2015.

114. Peterson, MD, Rhea, MR, and Alvar, BA. Applications of the dose-response for muscular strength development: a review of meta-analytic efficacy and reliability for designing training prescription. *J Strength Cond Res* 19:950-958, 2005.

115. Porter, MM. The effects of strength training on sarcopenia. *Can J Appl Physiol* 26:123-141, 2001.

116. Poudel, A, Hubbard, RE, Nissen, L, and Mitchell, C. Frailty: a key indicator to minimize inappropriate medication in older people. *QJM* 106:969-975, 2013.

117. Predel, HG, Rohden, C, Heine, O, Prinz, U, and Rost, RE. ACE inhibition and physical exercise: studies on physical work capacity, energy metabolism, and maximum oxygen uptake in well-trained, healthy subjects. *J Cardiovasc Pharmacol* 23(suppl 1):S25-S28, 1994.

118. Prieto-Alhambra, D, Judge, A, Javaid, MK, Cooper, C, Diez-Perez, A, and Arden, NK. Incidence and risk factors for clinically diagnosed knee, hip and hand osteoarthritis: influences of age, gender and osteoarthritis affecting other joints. *Ann Rheum Dis* 73:1659-1664, 2014.

119. Rahl, R. *Physical Activity and Health Guidelines: Recommendations for Various Ages, Fitness Levels, and Conditions From 57 Authoritative Sources*. Champaign, IL: Human Kinetics, 2010.

120. Rantanen, T, Guralnik, JM, Foley, D, Masaki, K, Leveille, S, Curb, JD, and White, L. Midlife hand grip strength as a predictor of old age disability. *JAMA* 281:558-560, 1999.

121. Riggs, BL. Endocrine causes of age-related bone loss and osteoporosis. *Novartis Found Symp* 242:247-259; discussion 260-264, 2002.

122. Riggs, BL, Khosla, S, and Melton, LJ, 3rd. Primary osteoporosis in men: role of sex steroid deficiency. *Mayo Clin Proc* 75(suppl):S46-S50, 2000.

123. Roddy, E, Zhang, W, Doherty, M, Arden, NK, Barlow, J, Birrell, F, Carr, A, Chakravarty, K, Dickson, J, Hay, E, Hosie, G, Hurley, M, Jordan, KM, McCarthy, C, McMurdo, M, Mockett, S, O'Reilly, S, Peat, G, Pendleton, A, and Richards, S. Evidence-based recommendations for the role of exercise in the management of osteoarthritis of the hip or knee--the MOVE consensus. *Rheumatology (Oxford)* 44:67-73, 2005.

124. Roghani, T, Torkaman, G, Movasseghe, S, Hedayati, M, Goosheh, B, and Bayat, N. Effects of short-term aerobic exercise with and without external loading on bone metabolism and balance in postmenopausal women with osteoporosis. *Rheumatol Int* 33:291-298, 2013.

125. Rosenberg, I. Summary comments. *Am J Clin Nutr* 50:1231-1233, 1989.

126. Rosenberg, IH. Sarcopenia: origins and clinical relevance. *Clin Geriatr Med* 27:337-339, 2011.

127. Roth, SM, Ferrell, RF, and Hurley, BF. Strength training for the prevention and treatment of sarcopenia. *J Nutr Health Aging* 4:143-155, 2000.

128. Roubenoff, R. Origins and clinical relevance of sarcopenia. *Can J Appl Physiol* 26:78-89, 2001.

129. Rudolf, R, Khan, MM, Labeit, S, and Deschenes, MR. Degeneration of neuromuscular junction in age and dystrophy. *Front Aging Neurosci* 6:99, 2014.

130. Sacks, JJ, Helmick, CG, and Langmaid, G. Deaths from arthritis and other rheumatic conditions, United States, 1979-1998. *J Rheumatol* 31:1823-1828, 2004.

131. Sarwark, JF and Kramer, A. Pediatric spinal deformity. *Curr Opin Pediatr* 10:82-86, 1998.

132. Sayer, AA, Robinson, SM, Patel, HP, Shavlakadze, T, Cooper, C, and Grounds, MD. New horizons in the pathogenesis, diagnosis and management of sarcopenia. *Age Ageing* 42:145-150, 2013.

133. Sayers, SP. High-speed power training: a novel approach to resistance training in older men and women. A brief review and pilot study. *J Strength Cond Res* 21:518-526, 2007.

134. Schindel, CS, Hommerding, PX, Melo, DA, Baptista, RR, Marostica, PJ, and Donadio, MV. Physical exercise recommendations improve postural changes found in

children and adolescents with cystic fibrosis: a randomized controlled trial. *J Pediatr* 166:710-716, 2015.

135. Schlosser, TP, Vincken, KL, Rogers, K, Castelein, RM, and Shah, SA. Natural sagittal spino-pelvic alignment in boys and girls before, at and after the adolescent growth spurt. *Eur Spine J* 24:1158-1167, 2015.
136. Schutzer, KA and Graves, BS. Barriers and motivations to exercise in older adults. *Prev Med* 39:1056-1061, 2004.
137. Seguin, R and Nelson, ME. The benefits of strength training for older adults. *Am J Prev Med* 25:141-149, 2003.
138. Seynnes, O, Fiatarone Singh, MA, Hue, O, Pras, P, Legros, P, and Bernard, PL. Physiological and functional responses to low-moderate versus high-intensity progressive resistance training in frail elders. *J Gerontol A Biol Sci Med Sci* 59:503-509, 2004.
139. Sherrington, C, Lord, SR, and Finch, CF. Physical activity interventions to prevent falls among older people: update of the evidence. *J Sci Med Sport* 7:43-51, 2004.
140. Simmonds, MJ. Exercise and activity for individuals with nonspecific back pain. In *ACSM's Resources for Clinical Exercise Physiology: Musculoskeletal, Neuromuscular, Neoplastic, Immunologic and Hematologic Conditions*. American College of Sports Medicine, ed. Philadelphia: Lippincott Williams & Wilkins, 148-161, 2010.
141. Simmonds, MJ and Derghazarian, T. Lower back pain syndrome. In *ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities*. Durstine, JL, Moore, GE, Painter, PL, and Roberts, SO, eds. Champaign, IL: Human Kinetics, 266-269, 2009.
142. Simpson, MR. Benign joint hypermobility syndrome: evaluation, diagnosis, and management. *J Am Osteopath Assoc* 106:531-536, 2006.
143. 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.
144. Skovron, ML, Szpalski, M, Nordin, M, Melot, C, and Cukier, D. Sociocultural factors and back pain. A population-based study in Belgian adults. *Spine* 19:129-137, 1994.
145. Smit, E, Winters-Stone, KM, Loprinzi, PD, Tang, AM, and Crespo, CJ. Lower nutritional status and higher food insufficiency in frail older US adults. *Br J Nutr* 110:172-178, 2013.
146. Smith, SS, Wang, CE, and Bloomfield, SA. Osteoporosis. In *ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities*. Durstine, JL, Moore, GE, Painter, PL, and Roberts, SO, eds. Champaign, IL: Human Kinetics, 270-279, 2009.
147. Spector, TD and MacGregor, AJ. Risk factors for osteoarthritis: genetics. *Osteoarthritis Cartilage* 12(suppl A):S39-S44, 2004.
148. Stanos, SP and Galluzzi, KE. Topical therapies in the management of chronic pain. *Postgrad Med* 125:25-33, 2013.
149. Strand, V, McIntyre, LF, Beach, WR, Miller, LE, and Block, JE. Safety and efficacy of US-approved viscosupplements for knee osteoarthritis: a systematic review and meta-analysis of randomized, saline-controlled trials. *J Pain Res* 8:217-228, 2015.
150. Tesch, PA. Exercise performance and beta-blockade. *Sports Med* 2:389-412, 1985.
151. Thompson, BJ, Conchola, EC, Palmer, TB, and Stock, MS. Effects of aging on maximal and rapid velocity capacities of the leg extensors. *Exp Gerontol* 58:128-131, 2014.
152. Tocchi, C. Frailty in older adults: an evolutionary concept analysis. *Res Theory Nurs Pract* 29:66-84, 2015.
153. Trappe, TA, White, F, Lambert, CP, Cesar, D, Hellerstein, M, and Evans, WJ. Effect of ibuprofen and acetaminophen on postexercise muscle protein synthesis. *Am J Physiol Endocrinol Metab* 282:E551-E556, 2002.
154. Tsutsumi, T, Don, BM, Zaichkowsky, LD, and Delizonna, LL. Physical fitness and psychological benefits of strength training in community dwelling older adults. *Appl Human Sci* 16:257-266, 1997.
155. United States Surgeon General. In *Bone Health and Osteoporosis: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Office of the Surgeon General, 2004.
156. U.S. Department of Health and Human Services. Physical Activity Guidelines for Americans. 2008. www.health.gov/paguidelines/guidelines. Accessed January 7, 2017.
157. van Tulder, M, Becker, A, Bekkering, T, Breen, A, del Real, MT, Hutchinson, A, Koes, B, Laerum, E, and Malmivaara, A. Chapter 3. European guidelines for the management of acute nonspecific low back pain in primary care. *Eur Spine J* 15(suppl 2):S169-S191, 2006.
158. Vandervoot, AA and Symons, TB. Functional and metabolic consequences of sarcopenia. *Can J Appl Physiol* 26:90-101, 2001.
159. Vincent, KR, Conrad, BP, Fregly, BJ, and Vincent, HK. The pathophysiology of osteoarthritis: a mechanical perspective on the knee joint. *PM R* 4:S3-S9, 2012.
160. Vogel, LA, Carotenuto, G, Basti, JJ, and Levine, WN. Physical activity after total joint arthroplasty. *Sports Health* 3:441-450, 2011.
161. Walsh, K, Cruddas, M, and Coggon, D. Low back pain in eight areas of Britain. *J Epidemiol Community Health* 46:227-230, 1992.
162. Waterman, BR, Owens, BD, Davey, S, Zacchilli, MA, and Belmont, PJ, Jr. The epidemiology of ankle sprains in the United States. *J Bone Joint Surg Am* 92:2279-2284, 2010.
163. Waters, DL, Baumgartner, RN, and Garry, PJ. Sarcopenia: current perspectives. *J Nutr Health Aging* 4:133-139, 2000.

164. Watts, NB, Lewiecki, EM, Miller, PD, and Baim, S. National Osteoporosis Foundation 2008 Clinician's Guide to Prevention and Treatment of Osteoporosis and the World Health Organization Fracture Risk Assessment Tool (FRAX): what they mean to the bone densitometrist and bone technologist. *J Clin Densitom* 11:473-477, 2008.

165. Weinstein, AM, Rome, BN, Reichmann, WM, Collins, JE, Burbine, SA, Thornhill, TS, Wright, J, Katz, JN, and Losina, E. Estimating the burden of total knee replacement in the United States. *J Bone Joint Surg Am* 95:385-392, 2013.

166. Weinstein, SL, Dolan, LA, Cheng, JC, Danielsson, A, and Morcuende, JA. Adolescent idiopathic scoliosis. *Lancet* 371:1527-1537, 2008.

167. Wilson, NA, Schneller, ES, Montgomery, K, and Bozic, KJ. Hip and knee implants: current trends and policy considerations. *Health Aff (Millwood)* 27:1587-1598, 2008.

168. Woo, J. Relationships among diet, physical activity and other lifestyle factors and debilitating diseases in the elderly. *Eur J Clin Nutr* 54(suppl 3):S143-S147, 2000.

169. Wright, NC, Looker, AC, Saag, KG, Curtis, JR, Delzell, ES, Randall, S, and Dawson-Hughes, B. The recent prevalence of osteoporosis and low bone mass in the United States based on bone mineral density at the femoral neck or lumbar spine. *J Bone Miner Res* 29:2520-2526, 2014.

170. Zacchilli, MA and Owens, BD. Epidemiology of shoulder dislocations presenting to emergency departments in the United States. *J Bone Joint Surg Am* 92:542-549, 2010.

171. Zaina, F, Donzelli, S, Lusini, M, Minnella, S, and Negrini, S. Swimming and spinal deformities: a cross-sectional study. *J Pediatr* 166:163-167, 2015.

172. Zhang, Y and Jordan, JM. Epidemiology of osteoarthritis. *Clin Geriatr Med* 26:355-369, 2010.

Chapter 4 Metabolic Conditions and Disorders

1. Akesson, A, Weismayer, P, Newby, P, and Wolk, A. Combined effect of low-risk dietary and lifestyle behaviors in primary prevention of myocardial infarction in women. *Arch Intern Med* 167:2122-2127, 2007.

2. Albuquerque, D, Stice, E, Rodríguez-López, R, Manco, L, and Nóbrega, C. Current review of genetics of human obesity: from molecular mechanisms to an evolutionary perspective. *Mol Genet Genomics* 290:1191-1221, 2015.

3. Altena, T, Michaelson, J, Ball, S, Guilford, B, and Thomas, T. Lipoprotein subfraction changes after continuous or intermittent exercise training. *Med Sci Sports Exerc* 38:367-372, 2006.

4. American College of Cardiology and American Heart Association Task Force on Practice Guidelines. Expert panel report: guidelines (2013) for the management of overweight and obesity in adults. *Obesity* 22:S41, 2014.

5. American College of Sports Medicine. *ACSM's Guidelines for Exercise Testing and Prescription*. 9th ed. Baltimore: Wolters Kluwer/Lippincott Williams & Wilkins, 2014.

6. American Diabetes Association. Insulin Basics. www.diabetes.org/living-with-diabetes/treatment-and-care/medication/insulin/insulin-basics.html. Accessed December 21, 2016.

7. American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes Care* 35:S64-S71, 2012.

8. American Diabetes Association. Standards of medical care in diabetes—2016. *Diabetes Care* 35:S1-S112, 2016.

9. Anderson, J, Konz, E, Frederich, R, and Wood, C. Long-term weight-loss maintenance: a meta-analysis of U.S. studies. *Am J Clin Nutr* 74:579-584, 2001.

10. Arabshahi, S, Ibiebele, T, Hughes, M, Lahmann, P, Williams, G, and van der Pols, J. Dietary patterns and weight change: 15-year longitudinal study in Australian adults. *Eur J Nutr* 55:1-11, 2016.

11. Arnarson, A, Ramel, A, Geirsdottir, O, Jonsson, P, and Thorsdottir, I. Changes in body composition and use of blood cholesterol lowering drugs predict changes in blood lipids during 12 weeks of resistance exercise training in older adults. *Aging Clin Exp Res* 26:287-292, 2014.

12. Bacchi, E, Negri, C, Zanolin, M, Milanese, C, Faccioli, N, Trombetta, M, Zoppini, G, Ceyese, A, Bonadonna, R, Schena, F, Bonora, E, Lanza, M, and Meghetti, P. Metabolic effects of aerobic and resistance training in type 2 diabetic subjects. *Diabetes Care* 25:1729-1736, 2012.

13. Bally, L, Zueger, T, Buehler, T, Dokumaci, A, Speck, C, Pasi, N, Ciller, C, Paganini, D, Feller, K, Loher, H, and Rosset, R. Metabolic and hormonal response to intermittent high-intensity and continuous moderate intensity exercise in individuals with type 1 diabetes: a randomised crossover study. *Diabetologia* 59:776-784, 2016.

14. Bambs, C, Kip, K, Dinga, A, Mulukutla, S, Aiyer, A, and Reis, S. Low prevalence of "ideal cardiovascular health" in a community-based population. *Circulation* 2011:850-857, 2011.

15. Bansal, N. Prediabetes diagnosis and treatment: a review. *World J Diabetes* 6:296-303, 2015.

16. Bansal, S, Buring, J, Rifai, N, Mora, S, Sacks, F, and Ridker, R. Fasting compared with nonfasting triglycerides and risk of cardiovascular events. *JAMA* 298:309-316, 2007.

17. Barnard, R, Lattimore, L, Holly, R, Cherry, S, and Pritikin, N. Response of non-insulin dependent diabetes patients to an intensive program of diet and exercise. *Diabetes Care* 5:370-374, 1982.

18. Baskin, H, Cobin, R, Duick, D, Gharib, H, Guttler, R, Kaplan, M, and Segal, R. American Association

of Clinical Endocrinologists medical guidelines for clinical practice for the evaluation and treatment of hyperthyroidism and hypothyroidism. *Endocr Pract* 8:457-469, 2001.

19. Bellenir, K. *Basic Consumer Health Information About Type 1 Diabetes (Insulin-Dependent or Juvenile-Onset Diabetes), Type 2 Diabetes (Noninsulin-Dependent or Adult-Onset Diabetes), and Related Disorders (Health Reference Series).* Omnigraphics, 1999.
20. Botero, J, Shiguemoto, G, Prestes, J, Marin, C, Do Prado, W, Pontes, C, Guerra, R, Ferreia, F, Baldissera, V, and Perez, S. Effects of long-term periodized resistance training on body composition, leptin, resistin and muscle strength in elderly post-menopausal women. *J Sports Med Phys Fitness* 53:289-294, 2013.
21. Bousquet-Santos, K, Vaisman, M, Barreto, N, Cruz-Filho, R, Salvador, B, Frontera, W, and Nobrega, A. Resistance training improves muscle function and body composition in patients with hyperthyroidism. *Arch Phys Med Rehabil* 87:1123-1130, 2006.
22. Brown, P. Why Did Afrezza Flop? www.medpagetoday.com/cardiology/type1diabetes/55663. Accessed December 21, 2016.
23. Budal, K, Mirzahosseini, A, Bela, N, and Toth, G. The pharmacotherapy of obesity. *Acta Pharm Hung* 85:3-17, 2015.
24. Buysschaert, M, Medina, J, Bergman, M, Shah, A, and Lonier, J. Prediabetes and associated disorders. *Endocrine* 48:371-393, 2015.
25. Calabro, P, Limongelli, G, Pacileo, G, Di Salvo, G, Golino, P, and Calabro, R. The role of adiposity as a determinant of an inflammatory milieu. *J Cardiovasc Med* 9:450-460, 2008.
26. Campaigne, B, Landt, K, Mellies, M, James, F, Glueck, C, and Sperling, M. The effects of physical training on blood lipid profiles in adolescents with insulin-dependent diabetes mellitus. *Phys Sportsmed* 13:83-89, 1985.
27. Carroll, M, Kit, B, Lacher, D, and Sung, S. Total and High-Density Lipoprotein Cholesterol in Adults: NHANES, 2011-2012. NCHS Data Brief No. 132, 2013.
28. Centers for Disease Control and Prevention. *National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States*. Atlanta: U.S. Department of Health and Human Services, 2014.
29. Chakera, A, Pearce, S, and Vaidya, B. Treatment for primary hypothyroidism: current approaches and future possibilities. *Drug Des Devel Ther* 6:1-11, 2012.
30. Chetty, V, Almulla, A, Odueyungbo, A, and Thabane, L. The effect of continuous subcutaneous glucose monitoring (CGMS) versus intermittent whole blood finger-stick glucose monitoring (SBGM) on hemoglobin A1c (HbA1c) levels in Type I diabetic patients: a systematic review. *Diabetes Res Clin Pract* 81:79-87, 2008.
31. Chiang, J, Kirkman, M, Laffel, L, and Peters, A. Type 1 diabetes through the life span: a position statement of the American Diabetes Association. *Diabetes Care* 37:2034-2054, 2014.
32. Chiuve, S, Rexrode, K, Speigelman, D, Logroscino, G, Manson, J, and Rimm, E. Primary prevention of stroke by healthy lifestyle. *Circulation* 118:947-954, 2008.

32a. Choquet, H and Meyre, D. Genetics of obesity: what have we learned? *Curr Genomics* 12:169-179, 2011.

33. Church, T, Blair, S, Cocreham, S, Johannsen, N, Johnson, W, Kramer, K, Mikus, C, Myers, V, Nauta, M, Rodarte, R, Sparks, L, Thompson, A, and Earnest, C. Effects of aerobic and resistance training on hemoglobin A1c levels in patients with type 2 diabetes. *JAMA* 304:2253-2262, 2010.
34. Clarke, T, Ward, B, Freeman, G, and Schiller, J. Early release of selected estimates based on data from the January-September 2015 National Health Interview Survey. National Center for Health Statistics. 2016. www.cdc.gov/nchs/nhis.htm. Accessed January 8, 2017.
35. Colberg, S. Diabetic Medications and Exercise, Part 2: Use of Symlin and Byetta. www.diabetesincontrol.com/diabetic-medications-and-exercise-part-2-use-of-symlin-and-byetta. Accessed December 7, 2016.
36. Colberg, S, Sigal, R, Fernhall, B, Regensteiner, J, Blissmer, B, Rubin, R, Chasan-Taber, L, Albright, A, and Braun, B. Exercise and type 2 diabetes: the American College of Sports Medicine and the American Diabetes Association joint position statement. *Diabetes Care* 33:e147-e167, 2010.
37. Colberg, S, Sigal, R, Yardley, J, Riddell, M, Dunstan, D, Dempsey, P, Horton, E, Castorino, K, and Tate, D. Physical activity/exercise and diabetes: a position statement of the American Diabetes Association. *Diabetes Care* 39:2065-2079, 2016.
38. Colditz, G, Willett, W, Rotnitzky, A, and Manson, J. Weight gain as a risk factor for clinical diabetes mellitus in women. *Ann Intern Med* 122:481-486, 1995.
39. Cuff, D, Menelly, G, Martin, A, Ignaszewski, A, Tildesley, H, and Frohlich, J. Effective exercise modality to reduce insulin resistance in women with type 2 diabetes. *Diabetes Care* 26:2977-2982, 2003.
40. Dabelea, D, Mayer-Davis, E, Saydah, S, Imperatore, G, Linder, B, Divers, J, Bell, R, Badaru, A, Talton, J, Crume, T, and Liese, A. Prevalence of type 1 and type 2 diabetes among children and adolescents from 2001 to 2009. *JAMA* 311:1778-1786, 2014.
41. Davidson, L, Hudson, R, Kilpatrick, K, Kuk, J, McMillan, K, Janiszewski, P, Lee, S, Lam, M, and Ross, R. Effects of exercise modality on insulin resistance and functional limitation in older adults: a randomized controlled study. *Arch Intern Med* 169:122-131, 2009.
42. Delbridge, E and Proietto, J. State of the science: VLED (very low energy diet) for obesity. *Asia Pac J Clin Nutr* 15:49-54, 2006.

43. Demers, L and Spencer, C. Laboratory medicine practice guidelines: laboratory support for the diagnosis and monitoring of thyroid disease. *Thyroid* 13:3-126, 2003.
44. Denke, M. Dietary prescriptions to control dyslipidemias. *Circulation* 105:132-135, 2002.
45. Despres, J, Lemieux, I, Bergeron, J, Pibarot, P, Mathieu, P, Larose, E, Rodés-Cabau, J, Bertrand, O, and Poirier, P. Abdominal obesity and the metabolic syndrome and contribution to global cardiometabolic risk. *Arterioscler Thromb Vasc Biol* 28:1039-1049, 2008.
46. Diabetes Prevention Program Research Group. 10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study. *Lancet* 374:1677-1686, 2009.
47. Dimitropoulos, G, Tahrani, A, and Stevens, M. Cardiac autonomic neuropathy in patients with diabetes mellitus. *World J Diabetes* 5:17-39, 2014.
48. Donnelly, JE, Blair, SN, Jakicic, JM, Manore, MM, Rankin, JW, and Smith, BK. Appropriate physical activity intervention strategies for weight loss and prevention of weight regain for adults. *Med Sci Sports Exerc* 41:459-471, 2009.
49. Drugs.com. Medications for Diabetes, Type 1. www.drugs.com/condition/diabetes-mellitus-type-i.html. Accessed December 7, 2016.
50. Drugs.com. Medications for Diabetes, Type 2. www.drugs.com/condition/diabetes-mellitus-type-ii.html. Accessed December 1, 2016.
51. Drugs.com. Medications for High Cholesterol. www.drugs.com/condition/hyperlipidemia.html. Accessed December 1, 2016.
52. Drugs.com. Medications for Hyperthyroidism. www.drugs.com/condition/hyperthyroidism.html. Accessed December 1, 2016.
53. Drugs.com. Medications for Obesity. www.drugs.com/condition/obesity.html. Accessed December 1, 2016.
54. Drugs.com. Medications for Underactive Thyroid (Hypothyroidism). www.drugs.com/condition/hypothyroidism.html. Accessed December 1, 2016.
55. Dubé, M, Lavoie, C, and Weisnagel, S. Glucose or intermittent high-intensity exercise in glargine/glulisine users with T1DM. *Med Sci Sports Exerc* 45:3-7, 2013.
56. Durstine, J, Moore, G, and Polk, D. Hyperlipidemia. In *ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities*. 3rd ed. Durstine, J, Moore, G, Painter, P, and Roberts, S, eds. Champaign, IL: Human Kinetics, 167-174, 2009.
57. Dyck, D. Leptin sensitivity in skeletal muscle is modulated by diet and exercise. *Exerc Sport Sci Rev* 33:189-194, 2005.
58. Ebbeling, C, Swain, J, Feldman, H, Wong, W, Hachey, D, Garcia-Lago, E, and Ludwig, D. Effects of dietary composition on energy expenditure during weight-loss maintenance. *JAMA* 307:2627-2634, 2012.
59. Eberhardt, M, Ogden, C, Engelgau, M, Cadwell, B, Hedley, A, and Saydah, S. Prevalence of overweight and obesity among adults with diagnosed diabetes—United States, 1988-1994 and 1999-2002. *MMWR* 53:1066-1068, 2004.
60. Eckel, R, Jakicic, J, Ard, J, De Jesus, J, Miller, N, Hubbard, V, I-Min, L, Lichtenstein, A, Loria, C, Millen, B, Nonas, C, Sacks, F, Smith, S, Jr, Svetkey, L, Wadden, T, and Yanovski, S. 2013 AHA/ACC guideline on lifestyle management to reduce cardiovascular risk: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol* 63, 3027-3028, 2014.
61. Ekblom-Bak, E, Ekblom, B, Vikström, M, de Faire, U, and Hellénius, M. The importance of non-exercise physical activity for cardiovascular health and longevity. *Br J Sports Med* 48:233-238, 2014.
62. Ertek, S and Cicero, A. Hyperthyroidism and cardiovascular complications: a narrative review on the basis of pathophysiology. *Arch Med Sci* 9:944-952, 2013.
63. Feingold, K and Grunfeld, C. Diabetes and dyslipidemia. In Endotext [Internet]. De Groot, LJ, Chrousos, G, Dungan, K, Grossman, A, Hershman, JM, McLachlan, R, New, M, Rebar, R, Singer, F, Vinik, A, and Weickart, MO, eds. South Dartmouth, MA: MDTextcom, 2015. www.ncbi.nlm.nih.gov/books/NBK305900.
64. Fock, K and Khoo, J. Diet and exercise in the management of obesity and overweight. *J Gastroenterol Hepatol* 28:59-63, 2013.
65. Ford, E, Bergmann, M, Kroger, J, Schienkiewitz, A, Weikert, C, and Boeing, H. Healthy living is the best revenge: findings from the European Prospective Investigation Into Cancer and Nutrition-Potsdam Study. *Arch Intern Med* 169:1355-1362, 2009.
66. Ford, E, Li, C, Zhao, G, Pearson, W, and Capewell, S. Trends in the prevalence of low risk factor burden for cardiovascular disease among United States adults. *Circulation* 120:1181-1188, 2009.
67. Ford, E, Li, C, Zhao, G, Pearson, W, and Mokdad, A. Hypertriglyceridemia and its pharmacologic treatment among U.S. adults. *Arch Intern Med* 169:572-578, 2009.
68. Foster-Schubert, K, Alfano, C, Duggan, C, Xiao, L, Campbell, K, Kong, A, Bain, C, Wang, C, Blacburn, G, and McTiernan, A. Effect of diet and exercise, alone or combined, on weight and body composition in overweight-to-obese postmenopausal women. *Obesity* 20:1628-1638, 2012.
69. Frigolet, M, Ramos Barragán, V, and Tamez Gonzalez, M. Low-carbohydrate diets: a matter of love or hate. *Ann Nutr Metab* 58:320-334, 2011.
70. Ganga, H, Sim, H, and Thompson, P. A systematic review of statin-induced muscle problems in clinical trials. *Am Heart J* 168:6-15, 2014.

71. Gardner, C. Glimmers of light: new clues to weight gain and loss. *Nutrition Action Health Letter* December:1-6, 2013.

72. Garg, S, Zisser, H, Schwartz, S, Bailey, T, Kaplan, R, Ellis, S, and Jovanovic, L. Improvement in glycemic excursions with a transcutaneous, real-time continuous glucose sensor: a randomized controlled trial. *Diabetes Care* 29:44-50, 2006.

73. George, E, Rosenkranz, R, and Kolt, G. Chronic disease and sitting time in middle-aged Australian males: findings from the 45 and Up Study. *Int J Behav Nutr Phys Act* 10:10-20, 2013.

74. Ghandehari, H, Kamai-Bahi, K, and Wong, N. Prevalence and extent of dyslipidemia and recommended lipid levels in U.S. adults with and without cardiovascular comorbidities: the National Health and Nutrition Examination Survey 2003-2004. *Am Heart J* 156:112-119, 2008.

75. Go, A, Mozaffarian, D, Roger, V, Benjamin, E, Berry, J, Blaha, M, Dai, S, Ford, E, Fox, C, Franco, S, and Fullerton, H. AHA statistical update. *Circulation* 127:e62-e245, 2013.

76. Goodman, C and Helgeson, K. *Exercise Prescription for Medical Conditions: Handbook for Physical Therapists*. Philadelphia: Davis, 2010.

77. Grøntved, A, Pan, A, Mekary, R, Stampfer, M, Willett, W, Manson, J, and Hu, F. Muscle-strengthening and conditioning activities and risk of type 2 diabetes: a prospective study in two cohorts of U.S. women. *PLoS Med* 11:e1001587, 2014.

78. Grundy, S, Smith, H, Eckel, R, Redberg, R, and Bonow, R. Prevention Conference VI: Diabetes and cardiovascular disease: executive summary. *Circulation* 105:2231-2239, 2002.

79. Guelfi, K, Jones, T, and Fournier, P. The decline in blood glucose levels is less with intermittent high-intensity compared with moderate exercise in individuals with type 1 diabetes. *Diabetes Care* 28:1289-1294, 2005.

80. Guelfi, K, Jones, T, and Fournier, P. New insights into managing the risk of hypoglycaemia associated with intermittent high-intensity exercise in individuals with type 1 diabetes mellitus. *Sports Med* 37:937-946, 2007.

81. Gustafson, B, Hammarstedt, A, Andersson, C, and Smith, U. Inflamed adipose tissue: a culprit underlying the metabolic syndrome and atherosclerosis. *Arterioscler Thromb Vasc Biol* 27:2276-2283, 2007.

82. Hall, K, Bemis, T, Brychta, R, Chen, K, Courville, A, Crayner, E, Goodwin, S, Gu, J, Howard, L, Knuth, N, Miller III, B, Prado, C, Siervo, M, Skarulis, M, Walter, M, Walter, P, and Yannai, L. Calorie for calorie, dietary fat restriction results in more body fat loss than carbohydrate restriction in people with obesity. *Cell Metab* 22:1-10, 2015.

83. Hall, K, Sacks, G, Chandramohan, D, Chow, C, Yang, Y, Gortmaker, S, and Swinburn, B. Quantification of the effect of energy imbalance on bodyweight. *Lancet* 378:826-836, 2011.

84. Heyman, E, Delamarche, P, Berthon, P, Meeusen, R, Briard, D, Vincent, S, DeKerdanet, M, and Delamarche, A. Alteration in sympathoadrenergic activity at rest and during intense exercise despite normal aerobic fitness in late pubertal adolescent girls with type 1 diabetes. *Diabetes Metab* 33:422-429, 2007.

85. Hill, J, Galloway, J, Goley, A, Marrero, D, Minners, R, Montgomery, B, Peterson, G, Ratner, R, Sanchez, E, and Aroda, V. Scientific statement: socioecological determinants of prediabetes and type 2 diabetes. *Diabetes Care* 36:2430-2439, 2013.

86. Hill, J, Wyatt, H, and Peters, J. Energy balance and obesity. *Circulation* 126:126-132, 2012.

87. Hollowell, J, Staehling, N, Flanders, W, Hannon, W, Gunter, E, Spencer, C, and Braverman, L. Serum TSH, T(4), and thyroid antibodies in the United States population (1988 to 1994): National Health and Nutrition Examination Survey (NHANES III). *J Clin Endocrinol Metab* 87:489-498, 2002.

88. Hu, F, Manson, J, Stampfer, M, Colditz, G, and Liu, S. Diet, lifestyle, and the risk of type 2 diabetes mellitus in women. *N Engl J Med* 345:790-797, 2001.

89. Ingelsson, E, Massaro, J, Sutherland, P, Jacques, P, Levy, D, D'Agostino, R, Vasan, R, and Robins, S. Contemporary trends in dyslipidemia in the Framingham Heart Study. *Arch Intern Med* 169:279-286, 2009.

90. Iscoe, K and Riddell, M. Continuous moderate-intensity exercise with or without intermittent high-intensity work: effects on acute and late glycaemia in athletes with Type 1 diabetes mellitus. *Diabet Med* 28:824-832, 2011.

91. Ismail, I, Keating, S, Baker, M, and Johnson, N. A systematic review and meta-analysis of the effect of aerobic vs. resistance exercise training on visceral fat. *Obes Rev* 13:68-91, 2012.

92. Jaggers, J, Hynes, K, and Wintergerst, K. Exercise and sport participation for individuals with type 1 diabetes: safety considerations and the unknown. *ACSMs Health Fit J* 20:40-44, 2016.

93. Jellinger, P, Smith, D, Mehta, A, Ganda, O, Handelsman, Y, Rodbard, H, Shepherd, M, and Seibel, J. American Association of Clinical Endocrinologists' guidelines for management of dyslipidemia and prevention of atherosclerosis. *Endocr Pract* 18:1-78, 2012.

94. Johansen, K. Exercise and chronic kidney disease: current recommendations. *Sports Med* 35:485-499, 2005.

95. Johansen, K. Exercise in the end-stage renal disease population. *J Am Soc Nephrol* 18:1845-1854, 2007.

96. Johansen, K. Exercise and dialysis. *Hemodial Int* 12:290-300, 2008.

97. Johansen, K, Chertow, G, Kutner, N, Dalrymple, L, Grimes, B, and Kaysen, G. Low level of self-reported physical activity in ambulatory patients new to dialysis. *Kidney Int* 78:1164-1170, 2010.

98. Johansen, K, Finkelstein, F, Revicki, D, Gitlin, M, Evans, C, and Mayne, T. Systematic review and meta-analysis of exercise tolerance and physical functioning in dialysis patients treated with erythropoiesis-stimulating agents. *Am J Kidney Dis* 55:535-548, 2010.

99. Johansen, K and Painter, P. Exercise in individuals with chronic kidney disease. *Am J Kidney Dis* 59:128-134, 2012.

100. Johansen, K, Painter, P, Sakkas, G, Gordon, P, Doyle, J, and Shubert, T. Effects of resistance exercise training and nandrolone deconate on body composition and muscle function among patients who receive hemodialysis: a randomized, controlled trial. *J Am Soc Nephrol* 17:2307-2314, 2006.

101. Johnson, C, Levey, A, Coresh, J, Levin, A, Lau, J, and Eknoyan, G. Clinical practice guidelines for chronic kidney disease in adults: part I. definition, disease stages, evaluation, treatment, and risk factors. *Am Fam Physician* 70:869-876, 2004.

101a. Jou, C. The biology and genetics of obesity: a century of inquiries. *N Engl J Med* 320:1874-1877, 2014.

102. Kahaly, G, Hellermann, J, Mohr-Kahaly, S, and Treese, N. Impaired cardiopulmonary exercise capacity in patients with hyperthyroidism. *Chest* 109:57-61, 1996.

103. Kahaly, G, Kampmann, C, and Mohr-Kahaly, S. Cardiovascular hemodynamics and exercise tolerance in thyroid disease. *Thyroid* 12:473-481, 2002.

104. Karfopoulou, E, Brikou, D, Mamalaki, E, Bersimis, F, Anastasiou, C, Hill, J, and Yannakouilia, M. Dietary patterns in weight loss maintenance: results from the medweight study. *Eur J Nutr* 55:1-12, 2016.

105. Katzmarzyk, P, Church, T, Craig, C, and Bouchard, C. Sitting time and mortality from all causes, cardiovascular disease, and cancer. *Med Sci Sports Exerc* 41:998-1005, 2009.

106. Kaufman, F. *Diabesity: A Doctor and Her Patients on the Front Lines of the Obesity-Diabetes Epidemic*. New York: Random House, 2006.

107. Klecha, A, Barreiro Arcos, M, and Frick, L. Immune-endocrine interactions in autoimmune thyroid disease. *Neuroimmunomodulation* 15:68-75, 2008.

108. Klein, E and Danzi, S. Thyroid disease and the heart. *Circulation* 116:1725-1755, 2007.

109. Knowler, W, Barrett-Connor, E, Fowler, S, Hamman, R, Lachin, J, Walker, E, and Nathan, D. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med* 346:393-403, 2002.

110. Kraemer, R, Chu, H, and Castracane, V. Leptin and exercise. *Exp Biol Med* 227:701-708, 2002.

111. Krishman, C and Thompson, P. The effects of statins on skeletal muscle strength and exercise performance. *Curr Clin Lipidol* 21:124-128, 2010.

112. Kujala, U, Kaprio, J, Sarna, S, and Koskenvuo, M. Relationship of leisure-time physical activity and mortality. *JAMA* 279:440-444, 1998.

113. Kurihara, O, Takano, M, Seino, Y, Shimizu, W, and Mizuno, K. Coronary atherosclerosis is already ongoing in pre-diabetic status: insight from intravascular imaging modalities. *World J Diabetes* 15:184-191, 2015.

114. Laaksonen, D, Atalay, M, Niskanen, L, Mustonen, T, Sen, C, Lakka, T, and Uusitupa, M. Aerobic exercise and the lipid profile in type 1 diabetic men: a randomized controlled trial. *Med Sci Sports Exerc* 32:1541-1548, 2000.

115. Larsen, P, Kronenberg, H, Melmed, S, and Polonsky, K. *Williams' Textbook of Endocrinology*. 10th ed. Philadelphia: Saunders, 2002.

116. Lee, Y and Pratley, R. Abdominal obesity and cardiovascular disease risk: the emerging role of the adipocyte. *J Cardiopulm Rehabil Prev* 27:2-10, 2007.

117. Lenz, O and Fornoni, A. Renin–angiotensin system blockade and diabetes: moving the adipose organ from the periphery to the center. *Kidney Int* 74:851-853, 2008.

118. Levine, J, Vander Weg, M, Hill, J, and Klesges, R. Non-exercise activity thermogenesis: the crouching tiger hidden dragon of societal weight gain. *Arterioscler Thromb Vasc Biol* 26:729-736, 2006.

119. Li, C, Ford, E, Zhao, G, and Mokdad, A. Prevalence of pre-diabetes and its association with clustering of cardiometabolic risk factors and hyperinsulinemia among U.S. adolescents. *Diabetes Care* 32:342-347, 2009.

120. Libby, P, Ridker, P, and Hannson, GK. Progress and challenges in translating the biology of atherosclerosis. *Nature* 473:317-324, 2011.

121. Liese, A, Schulz, M, Moore, C, and Mayer-Davis, E. Dietary patterns, insulin sensitivity and adiposity in the multi-ethnic insulin resistance atherosclerosis study population. *Br J Nutr* 92:973-984, 2004.

122. Lim, J, Iyer, A, Liu, L, Suen, J, and Lohman, R. Diet-induced obesity, adipose inflammation, and metabolic dysfunction correlating with PAR2 expression are attenuated by PAR2 antagonism. *FASEB J* 27:4757-4767, 2013.

123. Ling, C, Holme, B, Cotillard, A, Habii-Rachedi, F, Brazeilles, R, Gougis, S, Gausseres, N, Cani, P, Fellahi, S, Bastard, J, Kennedy, S, Dure, J, Erlich, S, Zucker, J, Rizkalia, S, and Clement, K. Dietary patterns differentially associate with inflammation and gut microbiota in overweight and obese subjects. *PLoS One* 9:e109434, 2014.

124. Loprinzi, P, Branscum, A, Hanks, J, and Smit, E. Healthy lifestyle characteristics and their joint association with cardiovascular disease biomarkers in U.S. adults. *Mayo Clin Proc* 91:432-442, 2016.

125. MacDonald, M. Postexercise late-onset hypoglycemia in insulin-dependent diabetic patients. *Diabetes Care* 10:584-588, 1987.

126. Maran, A, Pavan, P, Bonsembiante, B, Brugin, E, Ermolao, A, Avogaro, A, and Zaccaria, M. Continuous glucose monitoring reveals delayed nocturnal hypoglycemia after intermittent high-intensity exercise in nontrained patients with type 1 diabetes. *Diabetes Technol Ther* 12:763-768, 2010.

127. Martin, M, Heymsfeld, S, Haft, C, Kahn, B, Laughlin, M, Leibel, R, Tschop, M, and Yanovski, J. Defining leptin resistance: challenges and opportunities. *Cell Metab* 15:150-156, 2012.

128. Marwick, T, Hordern, M, Miller, T, Chyun, D, Bertoni, A, Blumenthal, R, Philippides, G, and Rocchini, A. Exercise training for type 2 diabetes mellitus and impact on cardiovascular risk: a scientific statement from the American Heart Association. *Circulation* 119:3244-3262, 2009.

129. Mayer, J, Purnima, R, and Mitra, K. Relation between caloric intake, body weight, and physical work studies in an industrial male population in West Bengal. *Am J Clin Nutr* 4:169-175, 1956.

130. Mayo Clinic. Diseases and Conditions: High cholesterol: Treatment. www.mayoclinic.org/diseases-conditions/high-blood-cholesterol/diagnosis-treatment/treatment/txc-20181958. Accessed December 1, 2016.

131. Mayo Clinic. Diseases and Conditions: Hyperthyroidism (overactive thyroid): Treatment and drugs. www.mayoclinic.org/diseases-conditions/hyperthyroidism/basics/treatment/con-20020986. Accessed December 1, 2016.

132. Mayo Clinic. Diseases and Conditions: Obesity: Treatment and drugs. www.mayoclinic.org/diseases-conditions/obesity/basics/treatment/con-20014834. Accessed December 1, 2016.

133. Mayo Clinic. Diseases and Conditions: Type 1 diabetes. www.mayoclinic.org/diseases-conditions/type-1-diabetes/basics/tests-diagnosis/con-20019573. Accessed December 1, 2016.

134. Mayo Clinic. Diseases and Conditions: Type 1 diabetes: Treatment and drugs. www.mayoclinic.org/diseases-conditions/type-1-diabetes/basics/treatment/con-20019573. Accessed December 1, 2016.

135. Mayo Clinic. Diseases and Conditions: Type 2 diabetes: Treatment. www.mayoclinic.org/diseases-conditions/type-2-diabetes/diagnosis-treatment/treatment/txc-20169988. Accessed December 1, 2016.

136. McAllister, R, Delp, M, and Laughlin, M. Thyroid status and exercise tolerance: cardiovascular and metabolic considerations. *Sports Med* 20:189-198, 1995.

137. McQueen, M. Exercise aspects of obesity treatment. *Ochsner J* 9:140-143, 2009.

138. Mikus, C, Boyle, L, Borengasser, S, Oberlin, D, Naples, S, Fletcher, J, Meers, G, Ruebel, M, Laughlin, M, Dellsperger, K, Fadel, P, and Thyfault, J. Simvastatin impairs exercise training adaptations. *J Am Coll Cardiol* 62:709-714, 2013.

139. Mistry, N, Wass, J, and Turner, M. When to consider thyroid dysfunction in the neurology clinic. *Pract Neurol* 9:145-156, 2009.

140. Miyashita, M, Burns, S, and Stensel, D. An update on accumulating exercise and postprandial lipemia: translating theory into practice. *J Prev Med Public Health* 46:S3-S11, 2013.

141. Moore, G, Painter, P, Brinker, K, Stray-Gundersen, J, and Mitchell, J. Cardiovascular response to submaximal stationary cycling during hemodialysis. *Am J Kidney Dis* 31:613-617, 1998.

142. Moore, G, Parsons, D, Stray-Gundersen, J, Painter, P, Brinker, K, and Mitchell, J. Uremic myopathy limits aerobic capacity in hemodialysis patients. *Am J Kidney Dis* 22:277-287, 1993.

143. Moy, C, Songer, T, LaPorte, R, Dorman, J, Kriska, A, Orchard, T, Becker, D, and Drash, A. Insulin-dependent diabetes mellitus, physical activity, and death. *Am J Epidemiol* 137:74-81, 1993.

144. Murphy, M, Blair, S, and Murtagh, E. Accumulated versus continuous exercise for health benefit: a review of empirical studies. *Sports Med* 39:29-43, 2009.

145. Mustafa, K, DeFronzo, R, and Abdul-Ghani, M. Treatment of prediabetes. *World J Diabetes* 2015:1207-1222, 2015.

146. National Cholesterol Education Program. Third report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) Final Report. *Circulation* 106:3143-3421, 2002.

147. National Heart Lung and Blood Institute. *The Practical Guide: Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*. NIH Publication No. DO-4084. Bethesda, MD: National Institutes of Health, 2000.

148. National Institute of Diabetes and Digestive and Kidney Diseases. Anemia in CKD. 2014. www.niddk.nih.gov/health-information/health-topics/kidney-disease/anemia-in-kidney-disease-and-dialysis/Pages/facts.aspx. Accessed December 23, 2016.

149. National Kidney Foundation. K/DOQU clinical practice guidelines for chronic kidney disease: evaluation, classification, and stratification. *Am J Kidney Dis* 39:S1-S266, 2002.

150. Nichols, G, Gullion, C, Koro, C, Ephross, S, and Brown, J. The incidence of congestive heart failure in type 2 diabetes: an update. *Diabetes Care* 27:1879-1884, 2004.

151. Nordestgaard, B, Benn, M, Schnohr, P, and Tybjaerg-Hansen, A. Nonfasting triglycerides and risk of myocardial infarction, ischemic heart disease, and death in men and women. *JAMA* 298:299-308, 2007.

152. Norris, R, Carroll, D, and Cochrane, R. The effects of aerobic and anaerobic training on fitness, blood pressure, and psychological stress and well-being. *J Psychosom Res* 34:367-375, 1990.

153. Nuffer, W, Trujillo, J, and Meqveri, J. A comparison of new pharmacological agents for the treatment of obesity. *Ann Pharmacother* 50:376-388, 2016.

154. O'Donnell, M, Xavier, D, Liu, L, Zhang, H, and Chen, S. Risk factors for ischemic and intracerebral haemorrhagic stroke in 22 countries (the INTERSTROKE study): a case-control study. *Lancet* 376:112-123, 2010.

155. O'Gorman, D, Karlson, H, McQuaid, S, Yousif, O, Rahman, Y, Gasparro, D, Glund, S, Chibalin, A, Zierath, J, and Nolan, J. Exercise training increases insulin stimulated glucose disposal and Glut-4 (SCL2A4) protein content in patients with type 2 diabetes. *Diabetologia* 49:2983-2992, 2006.

156. Ogden, C, Carroll, M, Kit, B, and Flegal, K. Prevalence of obesity and trends in body mass index among U.S. children and adolescents, 1999-2010. *JAMA* 307:483-490, 2012.

157. Ogden, C, Carroll, M, Kit, B, and Flegal, K. *Prevalence of Obesity in the United States, 2009-2010.* NCHS Data Brief No. 82. Hyattsville, MD: National Center for Health Statistics, 2012.

158. Painter, P. Physical functioning in end-stage renal disease: update 2005. *Hemodial Int* 9:218-235, 2005.

159. Painter, P. Chronic kidney and liver disease. In *ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities*. 4th ed. Moore, G, Durstine, J, and Painter, P, eds. Champaign, IL: Human Kinetics, 201-207, 2016.

160. Painter, P, Hector, L, Ray, K, Lynes, L, Dibble, S, Paul, S, Tomlanovich, S, and Ascher, N. A randomized trial of exercise training after renal transplantation. *Transplantation* 74:42-48, 2002.

161. Painter, P, Hector, L, Ray, K, Lynes, L, Paul, S, Dodd, M, Tomlanovich, S, and Ascher, N. Effects of exercise training on coronary heart disease risk factors in renal transplant recipients. *Am J Kidney Dis* 42:363-369, 2003.

162. Painter, P, Nelson-Worel, J, Hill, M, Thornbery, D, Shelp, W, Harrington, A, and Weinstein, A. Effects of exercise training during hemodialysis. *Nephron* 43:87-92, 1986.

163. Paoli, A, Pacelli, Q, Moro, T, Marcolin, G, Neri, M, Battaglia, G, Sergi, G, Bolzetta, F, and Bianco, A. Effects of high-intensity circuit training, low-intensity circuit training and endurance training on blood pressure and lipoproteins in middle-aged overweight men. *Lipids Health Dis* 12:131, 2013.

164. Parker, B and Thompson, P. Effect of statins on skeletal muscle: exercise, myopathy, and muscle outcomes. *Exerc Sport Sci Rev* 40:188-194, 2012.

165. Persinger, R, Foster, C, Gibson, M, Fater, D, and Porcari, J. Consistency of the talk test for exercise prescription. *Med Sci Sports Exerc* 36:1632-1636, 2004.

166. Pollock, M, Franklin, B, Balady, G, Chaitman, B, Fleg, J, Fletcher, B, Limacher, M, Piña, I, Stein, R, Williams, M, and Bazzarre, T. Resistance exercise in individuals with and without cardiovascular disease: benefits, rationale, safety, and prescription. An advisory from the Committee on Exercise, Rehabilitation, and Prevention, Council on Clinical Cardiology, American Heart Association. *Circulation* 101:828-833, 2000.

167. Pontzer, H. Constrained total energy expenditure and the evolutionary biology of energy balance. *Exerc Sport Sci Rev* 43:110-116, 2015.

168. Rabasa-Lhoret, R, Bourque, J, Ducros, F, and Chiasson, J. Guidelines for premeal insulin dose reduction for postprandial exercise of different intensities and durations in type 1 diabetic subjects treated intensively with a basal-bolus insulin regimen (ultralente-lispro). *Diabetes Care* 24:625-630, 2001.

169. Ramalho, A, de Lourdes Lima, M, Nunes, F, Cambuí, Z, Barbosa, C, Andrade, A, Viana, A, Martins, M, Abrantes, V, Aragão, C, and Temístocles, M. The effect of resistance versus aerobic training on metabolic control in patients with type-1 diabetes mellitus. *Diabetes Res Clin Pract* 72:271-276, 2006.

170. Rivera, J, O'Hare, A, and Harper, G. Update on the management of chronic kidney disease. *Am Fam Physician* 86:749-754, 2012.

171. Roberts, C and Barnard, R. Effects of diet and exercise on chronic disease. *J Appl Physiol* 98:3-30, 2005.

172. Rodgers, R, Tschop, M, and Wilding, J. Anti-obesity drugs: past, present, and future. *Dis Model Mech* 5:621-626, 2012.

173. Roitman, J and LaFontaine, T. *The Exercise Professional's Guide to Optimizing Health*. Baltimore: Wolters Kluwer/Lippincott Williams & Wilkins, 2012.

174. Rosenkranz, R, Duncan, M, Rosenkranz, S, and Kolt, G. Active lifestyles related to excellent self-rated health and quality of life: cross sectional findings from 194,545 participants in the 45 and up study. *BMC Public Health* 13:1071, 2013.

175. Saran, R, Li, Y, Robinson, B, Abbott, K, Agodoa, L, Ayanian, J, Bragg-Gresham, J, Balkrishnan, R, Chen, J, Cope, E, and Eggers, P. U.S. renal data system 2015: annual data report: epidemiology of kidney disease in the United States. *Am J Kidney Dis* 67:A7, 2016.

176. Schwingshackl, L, Dias, S, Strasser, B, and Hoffmann, G. Impact of different training modalities on anthropometric and metabolic characteristics in overweight/obese subjects: a systematic review and network meta-analysis. *PLoS Med* 8:e82853, 2013.

177. Segura-Orti, E and Johansen, K. Exercise in end-stage renal disease. *Semin Dial* 23:422-430, 2010.

178. Sideravičiūtė, S, Gailiūniene, A, Visagurskiene, K, and Vizbaraite, D. The effect of long-term swimming program on body composition, aerobic capacity and blood lipids in 14-19-year aged healthy girls and girls with type 1 diabetes mellitus. *Medicina (Kaunas)* 42:661-666, 2006.

179. Sigal, R, Kenny, G, Boulé, N, Wells, G, Prud'homme, D, Fortier, M, Reid, R, Tulloch, H, Coyle, D, Phillips,

P, Jennings, A, and Jaffey, J. Effects of aerobic training, resistance training, or both on glycemic control in type 2 diabetes: a randomized trial. *Ann Intern Med* 147:357-369, 2007.

180. Sigal, R, Kenny, G, Wasserman, D, and Castaneda-Sceppa, C. Physical activity/exercise and type 2 diabetes. *Diabetes Care* 27:2518-2539, 2004.
181. Sigal, R, Kenny, G, Wasserman, D, Castaneda-Sceppa, C, and White, R. Physical activity/exercise and Type 2 diabetes: a consensus statement from the American Diabetes Association. *Diabetes Care* 29:1433-1438, 2006.
182. Skugor, M. Hypothyroidism and Hyperthyroidism. 2014. www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/endocrinology/hypothyroidism-and-hyperthyroidism. Accessed January 8, 2017.
183. Slentz, C, Houmard, J, Johnson, J, Bateman, L, Tanner, C, McCartney, J, Duscha, B, and Kraus, W. Inactivity, exercise training and detraining, and plasma lipoproteins: STRRIDE: a randomized, controlled study of exercise intensity and amount. *J Appl Physiol* 103:432-442, 2007.
184. Smart, N, Williams, A, Levinger, I, Selig, S, Howden, E, Coombes, J, and Fassett, R. Exercise and Sports Science Australia (ESSA) position statement on exercise and chronic kidney disease. *J Sci Med Sport* 16:406-411, 2013.
185. Smith-Marsh, D. Type 1 Diabetes Risk Factors. www.endocrineweb.com/conditions/type-1-diabetes/type-1-diabetes-risk-factors. Accessed December 6, 2016.
186. Sorace, P, LaFontaine, T, and Thomas, T. Know the risks: lifestyle management of dyslipidemia. *ACSMs Health Fit J* 10:18-25, 2006.
187. Sparling, P, Franklin, B, and Hill, J. Energy balance: the key to a unified message on diet and physical activity. *J Cardiopulm Rehabil Prev* 33:12-15, 2013.
188. Spring, B, Ockene, J, Gidding, S, Mozaffarian, D, and Moore, S. Better population health through behavior change in adults: a call to action. *Circulation* 128:2169-2176, 2013.
189. Steven, S, Hollingsworth, K, Al-Mrabeh, A, Avery, L, Aribisala, B, Caslake, M, and Taylor, R. Very-low-calorie diet and 6 months of weight stability in type 2 diabetes: pathophysiologic changes in responders and nonresponders. *Diabetes Care* 39:808-815, 2016.
190. Stone, N, Robinson, J, Lichtenstein, A, Merz, C, Blum, C, Eckel, R, Goldberg, A, Gordon, D, Levy, D, Lloyd-Jones, D, and McBride, P. ACC/AHA guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults: a report of the American College of Cardiology/American Heart Association task force on practice guidelines. *J Am Coll Cardiol* 63:2889-2934, 2013.
191. Stöppler, M. HbA1c Test. www.emedicinehealth.com/hemoglobin_a1c_hba1c/article_em.htm. Accessed December 21, 2016.
192. Strasser, B, Arvandi, M, and Siebert, U. Resistance training, visceral obesity, and inflammatory response: a review of the evidence. *Obes Rev* 13:578-591, 2012.
193. Stuckey, M and Petrella, R. Heart rate variability in type 2 diabetes mellitus. *Crit Rev Biomed Eng* 41:137-147, 2013.
194. Tansey, M, Tsalikian, E, Beck, R, Mauras, N, Buckingham, B, Weinzimer, S, Janz, K, Kollman, C, Xing, D, Ruedy, K, and Steffes, M. The effects of aerobic exercise on glucose and counterregulatory hormone concentrations in children with type 1 diabetes. *Diabetes Care* 29:20-25, 2006.
195. Taplin, C, Cobry, E, Messer, L, McFann, K, Chase, H, and Fiallo-Scharer, R. Preventing post-exercise nocturnal hypoglycemia in children with type 1 diabetes. *J Pediatr* 157:784-788, 2010.
196. Thomas, T and LaFontaine, T. Exercise, nutritional strategies and lipoproteins. In *ACSM's Resource Manual for the Guidelines for Exercise Testing and Prescription*. 4th ed. Roitman, J, ed. Baltimore: Wolters Kluwer/Lippincott Williams & Wilkins, 2001.
197. Tonoli, C, Heyman, E, Roelands, B, Buyse, L, Cheung, S, Berthoin, S, and Meeusen, R. Effects of different types of acute and chronic (training) exercise on glycaemic control in type 1 diabetes mellitus. *Sports Med* 42:1059-1080, 2012.
198. Torre, D, Lamb, G, and Van Ruiswyck, J. *Koshar's Clinical Medicine for Students*. 5th ed. Baltimore: Wolters Kluwer/Lippincott Williams & Wilkins, 2008.
199. Trombold, J, Christmas, K, Machin, D, Kim, I, and Coyle, E. Acute high-intensity exercise is more effective than moderate-intensity exercise for attenuation of postprandial triglyceride elevation. *J Appl Physiol* 114:792-800, 2013.
200. Tsalikian, E, Mauras, N, Beck, R, Tamborlane, W, Janz, K, Chase, H, Wysocki, T, Weinzimer, S, Buckingham, B, Kollman, C, and Xing, D. Impact of exercise on overnight glycemic control in children with type 1 diabetes mellitus. *J Pediatr* 147:528-534, 2005.
201. Tuominen, J, Karonen, S, Melamies, L, Bolli, G, and Koivisto, V. Exercise-induced hypoglycaemia in IDDM patients treated with a short-acting insulin analogue. *Diabetologia* 38:106-111, 1995.
202. U.S. Department of Health and Human Services and U.S. Department of Agriculture. 2015-2020 Dietary Guidelines for Americans, Eighth Edition. 2015. http://health.gov/dietaryguidelines/2015/guidelines/. Accessed January 7, 2017.
203. U.S. National Library of Medicine. ACE inhibitors. https://medlineplus.gov/ency/patientinstructions/000087.htm. Accessed January 31, 2017.
204. U.S. National Library of Medicine. Pramlintide Injection. https://medlineplus.gov/druginfo/meds/a605031.html. Accessed December 7, 2016.

205. U.S. News and World Report. 2016. Diet rankings. www.usnews.com/info/blogs/press-room/2016/01/05/us-news-reveals-the-2016-best-diets-rankings. Accessed March 25, 2016.

206. Vehik, K, Hamman, R, Lezotte, D, Norris, J, Klingensmith, G, Bloch, C, Rewers, M, and Dabelea, D. Increasing incidence of type 1 diabetes in 0-to 17-year-old Colorado youth. *Diabetes Care* 30:503-509, 2007.

207. Vinik, A and Erbas, T. Neuropathy. In *Handbook of Exercise in Diabetes*. 2nd ed. Ruderman, N, ed. Alexandria, VA: American Diabetes Association, 463-496, 2002.

208. Vinik, A and Erbas, T. Diabetic autonomic neuropathy. *Handb Clin Neurol* 117:279-294, 2013.

209. Wang, Y, Simar, D, and Fiatarone Singh, M. Adaptations to exercise training within skeletal muscle in adults with type 2 diabetes or impaired glucose tolerance: a systematic review. *Diabetes Metab Res Rev* 25:13-40, 2009.

210. WebMD Medical Reference. Inhaled Insulin. www.webmd.com/diabetes/inhaled-insulin. Accessed December 21, 2016.

211. WebMD Medical Reference. Types of Insulin for Diabetes Treatment. www.webmd.com/diabetes/guide/diabetes-types-insulin#1. Accessed December 21, 2016.

212. Westman, E, Feinman, R, Mavropoulos, J, Vernon, M, Volek, J, Wortman, J, Yancy, W, and Phinney, S. Low-carbohydrate nutrition and metabolism. *Am J Clin Nutr* 86:276-284, 2007.

213. Willett, W and Stampfer, M. Current evidence on healthy eating. *Annu Rev Public Health* 34:77-95, 2013.

214. Williams, P. High density lipoprotein cholesterol and other risk factors for coronary artery disease in female runners. *N Engl J Med* 334:1298-1303, 1996.

215. Williams, P. Incident hypercholesterolemia in relation to changes in vigorous physical activity. *Med Sci Sports Exerc* 41:73-80, 2009.

216. Williams, P, Blanche, P, and Kraus, R. Behavioral versus genetic correlates of lipoproteins and adiposity in identical twins discordant for exercise. *Circulation* 112:350-356, 2005.

217. Williams, P, Stefanick, M, Vranizan, K, and Wood, P. The effects of weight loss by exercise or dieting on high-density lipoprotein (HDL) levels in men with low, intermediate, and normal-to-high HDL at baseline. *Metabolism* 43:917-924, 1994.

218. Willis, L, Slentz, C, Bateman, L, Shields, A, Piner, L, Bales, C, Houmard, J, and Kraus, W. Effects of aerobic and/or resistance training on body mass and fat mass in overweight or obese adults. *J Appl Physiol* 113:1831-1837, 2012.

219. Wing, R. Physical activity in the treatment of the adulthood overweight and obesity: current evidence and research issues. *Med Sci Sports Exerc* 31:S547-S552, 1999.

220. Wing, R and Hill, J. National Weight Control Registry Research Findings. http://nwcr.ws/Research/published%20research.htm. Accessed February 5, 2014.

221. Wong, C, Chiang, Y, Wai, J, Lo, F, Yeh, C, Chung, S, and Chang, C. Effects of a home-based aerobic exercise programme in children with type 1 diabetes mellitus. *J Clin Nurs* 20:681-691, 2011.

222. World Cancer Research Fund and American Institute for Cancer Research. Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective. 2007. www.aicr.org/assets/docs/pdf/reports/Second_Expert_Report.pdf. Accessed May 7, 2016.

223. Yang, Z, Scott, C, Mao, C, Tang, J, and Farmer, A. Resistance exercise versus aerobic exercise for type 2 diabetes: a systematic review and meta-analysis. *Sports Med* 44:487-499, 2014.

224. Yardley, J, Kenny, G, Perkins, B, Riddell, M, Balaa, N, Malcolm, J, Boulay, P, Khandwala, F, and Sigal, R. Resistance versus aerobic exercise acute effects on glycemia in type 1 diabetes. *Diabetes Care* 36:537-542, 2013.

225. Zaharieva, D and Riddell, M. Prevention of exercise-associated dysglycemia: a case study-based approach. *Diabetes Spectr* 28:55-62, 2015.

226. Zhang, J, Thomas, T, and Ball, S. Effect of exercise timing on postprandial lipemia and HDL cholesterol subfractions. *J Appl Physiol* 85:1516-1522, 1998.