

# References

## **Chapter 1**

Fye, B.W. 2006. Profiles in cardiology: Ernest Henry Starling. *Clinical Cardiology* 29:181-182.

## Chapter 2

- Galazka P.Z., and A.M. Shah. 2019. Left ventricular diastolic function. In S.D. Solomon, J.C. Wu, and L.D. Gillam (eds.), *Essential Echocardiography*. Netherlands: Elsevier Health Sciences.
- Lester, S.J., A.J. Tajik, R.A. Nishimura, J.K. Oh, B.K. Khandheria, and J.B. Seward. 2008. Unlocking the mysteries of diastolic function. *Journal of the American College of Cardiology* 51:679-689.
- Lu, D.Y., M. Mukherjee, and T. Abraham. 2019. Principles and practical aspects of strain echocardiography. In S.D. Solomon, J.C. Wu, and L.D. Gillam (eds.), *Essential echocardiography*. Netherlands: Elsevier Health Sciences.
- Oh, J.K., J.B. Seward, and A.J. Tajik. 2007. *The echo manual*, 3rd ed. Philadelphia: Lippincott, Williams & Wilkins.
- Shepherd, J.T., and P.M. Vanhoutte. 1980. *The human cardiovascular system: Facts and concepts*. New York: Raven Press.
- Solomon, S.D., and B.E. Bulwer. 2019. Assessment of left ventricular diastolic Function. In S.D. Solomon, J.C. Wu, and L.D. Gillam (eds.), *Essential echocardiography*. Netherlands: Elsevier Health Sciences.

### **Chapter 3**

- Gertz, E.W., J.A. Wisneski, W.C. Stanley, and R.A. Neese. 1988. Myocardial substrate utilization during exercise in humans. Dual carbon-labeled carbohydrate isotope experiments. *Journal of Clinical Investigation* 82:2017-2025.
- Hasenfuss, G. 1998. Calcium pump overexpression and myocardial function: Implications for gene therapy of myocardial failure. *Circulation Research* 83:966-968.
- Massie, B.M., G.G. Schwartz, J. Garcia, J.A. Wisneski, M.W. Weiner, and T. Owens. 1994. Myocardial metabolism during increased work states in the porcine left ventricle in vivo. *Circulation Research* 74:64-73.

## Chapter 4

- Akselrod, S., D. Gordon, F.A. Ubel, D.C. Shannon, A.C. Barger, and R.J. Cohen. 1981. Power spectrum analysis of heart rate fluctuation: A quantitative probe of beat to beat cardiovascular control. *Science* 213:220-222.
- Bunsawat, M., and T. Baynard. 2016. Cardiac autonomic modulation and blood pressure response to isometric handgrip and submaximal cycling exercise in individuals with Down syndrome. *Clinical Autonomic Research* 26:253-260.
- Fernhall, B., and M. Otterstetter. 2003. Attenuated responses to sympathoexcitation in individuals with Down syndrome. *Journal of Applied Physiology* 94:2158-2165.
- Figuroa, A., S.R. Collier, and T. Baynard. 2005. Impaired vagal modulation of heart rate in individuals with Down syndrome. *Clinical Autonomic Research* 15:45-50.
- Hämmerle, P., C. Eick, S. Blum, V. Schlageter, A. Bauer, K.D. Rizas, et al. 2020. Heart rate variability triangular index as a predictor of cardiovascular mortality in patients with atrial fibrillation. *Journal of the American Heart Association* 9:15.
- Hillebrand, S., K.B. Gast, R. de Mutsert, C.A. Sweene, J.W. Jukema, S. Middeldorp, et al. 2013. Heart rate variability and first cardiovascular event in populations without known cardiovascular disease: Meta-analysis and dose-response meta-regression. *European Society of Cardiology* 15:742-749.
- Jalife, J., and D.C. Michaels. 1994. Neural control of sinoatrial pacemaker activity. In: M.N. Levy and P.J. Schwartz (eds.), *Vagal control of the heart: Experimental basis and clinical implications*. New York: Futura.
- Malliani, A., F. Lombardi, and M. Pagani. 1994. Power spectral analysis of heart rate variability: A tool to explore neural regulatory mechanisms. *British Heart Journal* 71:1-2.
- Sessa, F., V. Anna, G. Messina, G. Cibelli, V. Monda, G. Marsala, et al. 2018. Heart rate variability as predictive factor of sudden cardiac death. *AGING-US* 10:2.
- Shaffer, F., and J.P. Ginsberg. 2017. An overview of heart rate variability metrics and norms. *Frontiers in Public Health* 5:258.
- Task Force of the European Society of Cardiology and the North American Society of Pacing and Electrophysiology. 1996. Heart rate variability. Standards of measurement, physiological interpretation, and clinical use. *European Heart Journal* 17(3):354-381.

## Chapter 5

- American College of Sports Medicine. 2000. *ACSM's guidelines for exercise testing and prescription*, 6th ed. Baltimore, MD: Lippincott, Williams & Wilkins.
- American College of Sports Medicine. 2001. *ACSM's resource manual for guidelines for exercise testing and prescription*, 4th ed. Baltimore, MD: Lippincott, Williams & Wilkins.
- Corrado, D., A. Biffi, C. Basso, A. Pelliccia, and G. Thiene. 2009. 12-lead ECG in the athlete: Physiological versus pathological abnormalities. *British Journal of Sports Medicine* 43:669-676.
- Corrado, D., A. Pelliccia, H. Heidbuchel, et al. 2010. Recommendation for interpretation of the 12-lead electrocardiogram in the athlete. *European Heart Journal* 31:243-259.
- Guyton, A.C., and J.E. Hall. 2000. *Textbook of medical physiology*, 10th ed. Philadelphia: Saunders.
- Schocken, D.D. 2014. Electrocardiographic left ventricular strain pattern: Everything old is new again. *Journal of Electrocardiology* 47(5):595-598.
- Stein, E. 1992a. *Rapid analysis of arrhythmias*, 2nd ed. Philadelphia: Lea & Febiger.
- Stein, E. 1992b. *Rapid analysis of electrocardiograms*, 2nd ed. Philadelphia: Lea & Febiger.
- Thaler, M. 1988. *The only ECG book you will ever need*. Philadelphia: Lippincott, Williams & Wilkins.
- Turagam, M.K., G.C. Flaker, P. Velagapudi, S. Vadali, and M.A. Alpert. 2015. Atrial fibrillation in athletes: Pathophysiology, clinical presentation, evaluation and management. *Journal of Atrial Fibrillation* 8(4), 1309. <https://doi.org/10.4022/jafib.1309>

## Chapter 6

- Badeer, H.S., and J.W. Hicks. 1992. Hemodynamics of vascular “waterfall”: Is the analogy justified? *Respiration Physiology* 87:205-217.
- Berne, R.M., and M.N. Levy. 2001. *Cardiovascular physiology*, 8th ed. St. Louis: Mosby.
- Campos-Arias, D., M.L. De Buyzere, J.A. Chirinos, E.R. Rietzschel, and P. Segers. 2021. Longitudinal changes of input impedance, pulse wave velocity, and wave reflection in a middle-aged population: The Asklepios Study. *Hypertension* 77(4):1154-1165. doi: 10.1161/HYPERTENSIONAHA.
- Chobanian, A.V., G.L. Bakris, H.R. Black, W.C. Cushman, L.A. Green, J.L. Izzo, et al. 2003. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Journal of the American Medical Association* 289:2560-2572.
- Germann, W.J., and C.L. Stanfield. 2002. *Principles of human physiology*. San Francisco: Benjamin Cummings.
- Guyton, A.C., and J.E. Hall. 2021. *Textbook of medical physiology*, 14th ed. Philadelphia: Saunders.
- Hainsworth, R. 1995. Cardiovascular reflexes from ventricular and coronary receptors. *Advances in Experimental Medicine and Biology* 381:157-74.
- Koller, A., D. Sun, A. Huang, and G. Kaley. 1994. Corelease of nitric oxide and prostaglandins mediates flow-dependent dilation of rat gracilis muscle arterioles. *American Journal of Physiology* 267:H326-H332.
- Laurent, S. 2021. Longitudinal versus cross-sectional changes in aortic stiffness with aging. *Hypertension*. 77:1166-1168. <https://doi.org/10.1161/HYPERTENSIONAHA.120.16740>.
- Leung, A.A., S.S. Daskalopoulou, K. Dasgupta, et al. 2017. Hypertension Canada’s 2017 guidelines for diagnosis, risk assessment, prevention, and treatment of hypertension in adults. *The Canadian Journal of Cardiology* 33:557-576.
- Lewington S., R. Clarke, N. Qizilbash, R. Peto, R. Collins, Prospective Studies Collaboration. 2002. Age-specific relevance of usual blood pressure to vascular mortality: A meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet* 360:1903-1913.
- Little, R.C. 1985. *Physiology of the heart and circulation*. Chicago: Year Book Medical.
- Marieb, E.N., and K.N. Hoehn. 2018. *Human anatomy and physiology*, 11th ed. San Francisco: Pearson/Benjamin Cummings.
- McGill, J.B. 2009. Improving microvascular outcomes in patients with diabetes through management of hypertension. *Postgraduate Medicine* 121:89-101.
- Mulvany, M.J., and C. Aalkjaer. 1990. Structure and function of small arteries. *Physiology Reviews* 70:921-961.
- Mynard, J.P., A. Kondiboyina, R. Lowalski, M.M.H. Cheung, J.J. Smolich. Measurement, analysis and interpretation of pressure/flow waves in blood vessels. 2020. *Frontiers in Physiology* 11:1085. doi:10.3389/fphys.2020.01085.
- O’Rourke, M.F., and W.W. Nichols. 2007. Timing and amplitude of wave reflection. *Hypertension* 49:E3.
- Perloff, D., C. Grim, J. Flack, E.D. Frolich, M. Hill, M. McDonald, and B.Z. Morgenstern. 1993. Human blood pressure determination by sphygmomanometry. *Circulation* 88:2460-2470.
- Pickering, T.G., J.E. Hall, L.J. Appel, B.E. Falkner, J. Graves, M.N. Hill, D.W. Jones, T. Kurtz, S.G. Sheps, and E.J. Roccella. 2005. Recommendations for blood pressure measurement in humans and animals, part 1: Blood pressure measurement in humans. *Hypertension* 45:142-161.
- Raven, P.B., J.T. Potts, X. Shi, and J. Pawelzyk. 2000. Baroreceptor-mediated reflex regulation of blood pressure during exercise. In: B. Saltin, R. Boushel, N. Secher, and J. Mitchell, *Exercise and circulation in health and disease*. Champaign, IL: Human Kinetics.
- Ray, C.A., and M. Sito. 2000. The cardiopulmonary baroreflex. In: B. Saltin, R. Boushel, N. Secher, and J. Mitchell, *Exercise and circulation in health and disease*. Champaign, IL: Human Kinetics.
- Reboussin, D.M., N.B. Allen, M.E. Griswold, E. Guallar, Y. Hong, D.T. Lackland, et al. 2018. Systematic review for the 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines [published correction appears in *Hypertension*. 2018 Jun;71(6):e145]. *Hypertension* 71(6):e116-e135. doi:10.1161/HYP.0000000000000067.
- Remington, J.W., and L.J. O’Brien. 1970. Construction of aortic flow pulse from pressure pulse. *American Journal of Physiology* 218:437-447.
- Rowell, L.B. 1986. *Human circulation: Regulation during physical stress*. New York: Oxford University Press.
- Scuteri, A, C.H. Morrell, M. Orrù M, J.B. Strait, K.V. Tarasov, L.A. Pina Ferreli, F. Loi, M. Grazia Pilia, A. Delitala, H. Spurgeon, S.S. Najjar, M. AlGhatrif, and E.G. Lakatta. 2014. Longitudinal perspective on the conundrum of central arterial stiffness, blood pressure, and aging. *Hypertension*. 64(6):1219-1227. doi:10.1161/HYPERTENSIONAHA.114.04127.
- Stergiou, G.S., P. Palatini, G. Parati, E. O’Brien, A. Januszewicz, E. Lurbe, A. Persu, G. Mancia, R. Kreutz, European Society of Hypertension Council and the European Society of Hypertension Working Group on Blood Pressure Monitoring and

- Cardiovascular Variability. 2021. 2021 European Society of Hypertension practice guidelines for office and out-of-office blood pressure measurement. *Journal of Hypertension* 39(7):1293-1302. doi:10.1097/HJH.0000000000002843.
- Whelton, P.K., R.M. Carey, W.S. Aronow, D.E. Casey Jr., K.J. Collins, C.D. Himmelfarb, S.M. DePalma, et al. 2018. 2017 CC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Journal of the American College of Cardiology*. 71(19):e127-e248. <https://doi.org/10.1016/j.jacc.2017.11.006>
- Williams, C.A., and A.R. Lind. 1979. Measurement of forearm blood flow by venous occlusion plethysmography: Influence of hand blood flow during sustained and intermittent isometric exercise. *European Journal of Applied Physiology and Occupational Physiology* 42:141-149.

## Chapter 7

- Akosah, K.O., A. Schaper, C. Cogbill, and P. Schoenfeld. 2003. Preventing myocardial infarction in the young adult in the first place: How do the national cholesterol education panel iii guidelines perform? *Journal of the American College of Cardiology* 4:1475-1479.
- Broxterman, R.M., M.A. Witman, J.D. Trinity, H.J. Groot, M.J. Rossman, S.Y. Park, et al. 2019. Strong relationship between vascular function in the coronary and brachial arteries. *Hypertension* 74:208-215. doi:10.1161/HYPERTENSIONAHA.119.12881.
- Brozovich, F.V., C.J. Nicholson, C.V. Degen, Y.Z. Gao, M. Aggarwal, and K.G. Morgan. 2016. Mechanisms of vascular smooth muscle contraction and the basis for pharmacologic treatment of smooth muscle disorders. *Pharmacological Reviews* 68(2):476-532. doi:10.1124/pr.115.010652.
- Celermajer, D.S., K.E. Sorenson, C. Bull, J. Robinson, and J.E. Deanfield. 1994. Endothelium-dependent dilation in the systemic arteries of asymptomatic subjects relates to coronary risk factors and their interaction. *Journal of the American College of Cardiology* 24:1468-1474.
- Corretti, M.C., T.J. Anderson, E.J. Benjamin, D. Celermajer, F. Charbonneau, M.A. Creager, et al. 2002. Guidelines for the ultrasound assessment of endothelial-dependent flow-mediated vasodilation of the brachial artery: A report of the International Brachial Artery Reactivity Task Force. *Journal of the American College of Cardiology* 39(2):257-265. doi: 10.1016/S0735-1097(01)01746-746.
- DiCorleto, P.E., and P.L. Fox. 2005. Vascular endothelium. In: V. Fuster, E.J. Topol, and E.G. Nabel (eds.), *Atherothrombosis and coronary artery disease*. Philadelphia: Lippincott, Williams & Wilkins, 389-400.
- Krogh, A. 1929. *The anatomy and physiology of capillaries*. New Haven, CT: Yale University Press.
- Lakshmanan S., C. Shekar, A. Kinninger, D. Birudaraju, S. Dahal, A. Onuegbu, et al. 2020. Association of flow mediated vasodilation and burden of subclinical atherosclerosis by coronary CTA. *Atherosclerosis* 302:15-19. <https://doi.org/10.1016/j.atherosclerosis.2020.04.009>.
- Levick, J.R. 2003. *Introduction to cardiovascular physiology*, 4th ed. London, England: Arnold.
- Libby, P. 2005. The vascular biology of atherosclerosis. In: D.P. Zipes, P. Libby, R.O. Bonow, and E. Braunwald (eds.), *Braunwald's heart disease: A textbook of cardiovascular medicine*, 7th ed. Philadelphia: Elsevier Saunders, 2067-2092.
- Maiorana, A., G. O'Driscoll, R. Taylor, and D. Green. 2003. Exercise and the nitric oxide vasodilator system. *Sports Medicine* 33(14):1013-1035.
- Mekuria A.B., Z.D. Kifle, and M. Abdelwuhab. 2021. Endothelin system and therapeutic application of endothelin receptor antagonists. *Journal of Clinical & Experimental Pharmacology* 10(272):1-10. doi:10.35248/2161-1459.21.10.272.
- Neunteufl, T., S. Heher, R. Katzenschalager, G. Wolfst, and G. Maurer. 2000. Long-term prognostic value of flow-mediated dilation in the brachial artery of patients with chest pain. *Journal of the American College of Cardiology* 86:207-210.
- Xu, S., I. Ilyas, P.J. Little, H. Li, D. Kamato, X. Zheng, S. Luo, Z. Li, P. Liu, J. Han, I.C. Harding, E.E. Ebong, S.J. Cameron, A.G. Stewart, and J. Weng. 2021. Endothelial dysfunction in CVD and beyond. *Pharmacological Reviews* 73 (3) 924-967; doi: 10.1124/pharmrev.120.000096.
- Zipes, D.P. and H.J.J. Wellens. 1998. Sudden cardiac death. *Circulation* 98:2334-2351.

## Chapter 8

- Colman, R.W., A.W. Clowes, J.N. George, J. Hirsh, and V.J. Marder. 2001. Overview of hemostasis. In: R.W. Colman, J. Hirsh, V.J. Marder, A.W. Clowes, and J.N. George (eds.), *Hemostasis and thrombosis: Basic principles and clinical practice*, 4th ed. Philadelphia: Lippincott, Williams & Wilkins, 3-16.
- Guirguis-Blake J.M., C.V. Evans, L.A. Perdue, S.I. Bean, and C.A. Senger. 2021. Aspirin use to prevent cardiovascular disease and colorectal cancer: An evidence update for the U.S. Preventive Services Task Force. Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services. Contract No. HSA-290-2015-00007-I-EPC5, Task Order 9 AHRQ Publication No. 21-05283-EF-1 September 2021.
- Konkle, B.A., and A.I. Schafer. 2005. Hemostasis, thrombosis, fibrinolysis and cardiovascular disease. In: D.P. Zipes, P. Libby, R.O. Bonow, and E. Braunwald (eds.), *Braunwald's heart disease: A textbook of cardiovascular medicine*, 7th ed. Philadelphia: Elsevier Saunders, 2067-2092.
- Leonard-Lorant, I., X. Delabranche, F. Severac, et al. 2020. Acute pulmonary embolism in COVID-19 patients on CT angiography and relationship to D-Dimer levels. *Radiology* 296:E189-E191.
- Neubauer, K., and B. Zieger. 2021. Endothelial cells and coagulation. *Cell and Tissue Research*. Online ahead of print. doi:10.1007/s00441-021-03471-2.
- Rao, G.H.R. 1999. Platelet physiology and pharmacology: An overview. In: G.H.R. Rao (ed.), *Handbook of platelet physiology and pharmacology*. Boston: Kluwer Academic, 1-20.
- Ryningen, A., and H. Holmsen. 1999. Biochemistry of platelet activation. In: G.H.R. Rao (ed.), *Handbook of platelet physiology and pharmacology*. Boston: Kluwer Academic, 188-237.
- Sardu, C., J. Gambardella, M.B. Morelli, X. Wang, R. Marfella, and G. Santulli. 2020. Hypertension, thrombosis, kidney failure, and diabetes: Is COVID-19 an endothelial disease? A comprehensive evaluation of clinical and basic evidence. *Journal of Clinical Medicine* 9(11):1417. doi: 10.3390/jcm9051417.
- Terpos, E., I. Ntanasis-Stathopoulos, I. Elalamy, E. Kastritis, T.N. Sergentanis, M. Politou, T. Psaltopoulou, G. Gerotziakas, and M.A. Dimopoulos. 2020. Hematological findings and complications of COVID-19. *American Journal of Hematology* 95:834-847. doi: 10.1002/ajh.25829.
- Xie, Y., X. Wang, P. Yang, and S. Zhang. 2020. COVID-19 complicated by acute pulmonary embolism. *Radiology. Cardiothoracic Imaging* 2(2):e200067. doi: 10.1148/ryct.2020200067.
- Yau, J.W., H. Teoh, and S. Verma. 2015. Endothelial cell control of thrombosis. *BMC Cardiovascular Disorders* 15:1-11. doi:10.1186/s12872-015-0124-z.

## Chapter 9

- Acil, T., E. Atalar, L. Sahiner, B. Kaya, I.C. Haznedaroglu, L. Tokgozoglu, K. Ovunc, K. Aytemir, N. Ozer, A. Oto, F. Ozmen, N. Nazli, S. Kes, and S. Aksoyek. 2007. Effects of acute exercise on fibrinolysis and coagulation in patients with coronary artery disease. *International Heart Journal* 48:277-285.
- Alam, M., and F.H. Smirk. 1937. Observations in man upon a blood pressure raising reflex arising from the voluntary muscles. *Journal of Physiology* 89:372-383.
- Andrew, M., C. Carter, H. O'Brodovich, and G. Heigenhauser. 1986. Increases in factor VIII complex and fibrinolytic activity are dependent on exercise intensity. *Journal of Applied Physiology* 60:1917-1922.
- Arai, M., H. Yorifuji, S. Ikematsu, H. Nagasawa, M. Fujimaki, K. Fukutake, T. Katsumura, T. Ishii, and H. Iwane. 1990. Influences of strenuous exercise (triathlon) on blood coagulation and fibrinolytic system. *Thrombosis Research* 57:465-471.
- Barrett-O'Keefe, Z., Kaplon, R.E., and J.R. Halliwill. 2013. Sustained postexercise vasodilatation and histamine receptor activation following small muscle-mass exercise in humans. *Experimental Physiology* 2013 98(1):268-277.
- Bartlett, I.S., and S.S. Segal. 2000. Resolution of smooth muscle and endothelial pathways for conduction along hamster cheek pouch. *American Journal of Physiology* 278:H604.
- Bartsch, P., B. Welsch, M. Albert, B. Friedmann, M. Levi, and E.K. Kruithof. 1995. Balanced activation of coagulation and fibrinolysis after a 2-h triathlon. *Medicine and Science in Sports and Exercise* 27:1465-1470.
- Baynard, T., W.C. Miller, and B. Fernhall. 2003. Effects of exercise on vasodilatory capacity in endurance- and resistance-trained men. *European Journal of Applied Physiology* 89(1):69-73.
- Berger, A., E. Grossman, M. Katz, S. Kivity, R. Klempfner, S. Segev, I. Goldenberg, Y. Sidi, and E. Maor. 2015. Exercise blood pressure and the risk for future hypertension among normotensive middle-aged adults. *Journal of the American Heart Association* 4(4). pii: e001710.
- Birk, G.K., E.A. Dawson, C. Atkinson, A. Haynes, N.T. Cable, D.H. Thijssen, and D.J. Green. 2012. Brachial artery adaptation to lower limb exercise training: role of shear stress. *Journal of Applied Physiology* 112: 1653-1658.
- Burns, A.T., A. La Gerche, A.I. MacIsaac, and D.L. Prior. 2008. Augmentation of left ventricular torsion with exercise is attenuated with age. *Journal of the American Society of Echocardiography* 21(4):315-320
- Cadroy, Y., F. Pillard, K.S. Sakariassen, C. Thalamas, B. Boneu, and D. Riviere. 2002. Strenuous but not moderate exercise increases the thrombotic tendency in healthy sedentary male volunteers. *Journal of Applied Physiology* 93:829-833.
- Casey, D.P., and M.J. Joyner. 2011. Local control of skeletal muscle blood flow during exercise: Influence of available oxygen. *Journal of Applied Physiology* 111(6):1527-1538.
- Clifford, P.S., and Y. Hellsten. 2004. Vasodilatory mechanisms in contracting skeletal muscle. *Journal of Applied Physiology* 97:393-403.
- Cohen, R.J., S.E. Epstein, and L.S. Cohen. 1968. Alterations in blood fibrinolysis and blood coagulation induced by exercise and the role of beta-adrenergic receptor stimulation. *Lancet* 2:1264.
- Collier, S.R., M.D. Diggle, K.S. Heffernan, E.E. Kelly, M.M. Tobin, and B. Fernhall. 2010. Changes in arterial distensibility and flow-mediated dilation after acute resistance vs. aerobic exercise. *Journal of Strength and Conditioning Research* 24(10):2846-2852.
- Coyle, E.F., and J. Gonzalez-Alonso. 2001. Cardiovascular drift during prolonged exercise: New perspectives. *Exercise and Sport Sciences Reviews* 29:88-92.
- Currie, K.D., J.S. Floras, A. La Gerche, and J.M. Goodman. 2018. Exercise blood pressure guidelines: Time to re-evaluate what is normal and exaggerated? *Sports Medicine* 48(8):1763-1771.
- Davies, P.F. 1995. Flow-mediated endothelial mechanotransduction. *Physiological Reviews* 75:519-560.
- Dawson, E.A., D.J. Green, N.T. Cable, and D.H. Thijssen. 2013. Effects of acute exercise on flow-mediated dilatation in healthy humans. *Journal of Applied Physiology* 115(11):1589-1598.
- de Brito, L.C., R.Y. Fecchio, T. Peçanha, A. Lima, J. Halliwill, and C.L.M. Forjaz. Recommendations in post-exercise hypotension: Concerns, best practices and interpretation. 2019. *International Journal of Sports Medicine* 40(8):487-497.
- Degens, H., S. Salmons, and J.C. Jarvis. 1998. Intramuscular pressure, force and blood flow in rabbit tibialis anterior muscles during single and repetitive contractions. *European Journal of Applied Physiology and Occupational Physiology* 78:13-19.
- Delp, M.D. 1999. Control of skeletal muscle perfusion at the onset of dynamic exercise. *Medicine and Science in Sports and Exercise* 31:1011-1018.
- Drew, R.C. 2017. Baroreflex and neurovascular responses to skeletal muscle mechanoreflex activation in humans: an exercise in integrative physiology. *American Journal of Physiology. Regulatory, Integrative and Comparative Physiology* 313(6):R654-R659.
- Dyke, C.K., N.M. Dietz, R.L. Lennon, D.O. Warner, and M.J. Joyner. 1998. Forearm blood flow responses to handgripping after local neuromuscular blockade. *Journal of Applied Physiology* 84: 754-758.

- El-Sayed, M.S., Z. El-Sayed Ali, and S. Ahmadizad. 2004. Exercise and training effects on blood haemostasis in health and disease: An update. *Sports Medicine* 34:181-200.
- Ely, M.R., S.N. Cheuvront, W.O. Roberts, and S.J. Montain. 2007. Impact of weather on marathon-running performance. *Medicine and Science in Sports and Exercise* 39:487-493.
- Emerson, G.G., and S.S. Segal. 2000a. Electrical coupling between endothelial cells and smooth muscle cells in hamster feed arteries: Role in vasomotor control. *Circulation Research* 87:474-479.
- . 2000b. Endothelial cell pathway for conduction of hyperpolarization and vasodilation along hamster feed artery. *Circulation Research* 86:94-100.
- Ersoz, G., A.M. Zegeroglu, H. Ficicilar, H. Ozcan, P. Oztekin, S. Aytac, and S. Yavuzer. 2002. Effect of submaximal and incremental upper extremity exercise on platelet function and the role of blood shear stress. *Thrombosis Research* 108:297-301.
- Ferguson, S., N. Gledhill, V.K. Jamnik, C. Wiebe, and N. Payne. 2001. Cardiac performance in endurance-trained and moderately active young women. *Medicine and Science in Sports and Exercise* 33:1114-1119.
- Figures, W.R., L.M. Searce, Y. Wachtfogel, J. Chen, R.F. Colman, and R.W. Colman. 1986. Platelet ADP receptor and alpha 2-adrenoreceptor interaction. Evidence for an ADP requirement for epinephrine-induced platelet activation and an influence of epinephrine on ADP binding. *Journal of Biological Chemistry* 261:5981-5986.
- Fritzsche, R.G., T.W. Switzer, B.J. Hodgkinson, and E.F. Coyle. 1999. Stroke volume decline during prolonged exercise is influenced by the increase in heart rate. *Journal of Applied Physiology* 86:799-805.
- Fuglevand, A.J., and S.S. Segal. 1997. Simulation of motor unit recruitment and microvascular unit perfusion: Spatial considerations. *Journal of Applied Physiology* 83:1223-1234.
- Gledhill, N., D. Cox, and R. Jamnik. 1994. Endurance athletes' stroke volume does not plateau: Major advantage is diastolic function. *Medicine and Science in Sports and Exercise* 26:1116-1121.
- Gonzalez-Alonso, J. 2008. Point: Stroke volume does/does not decline during exercise at maximal effort in healthy individuals. *Journal of Applied Physiology* 104:275-276; discussion 279-280.
- Gonzalez-Alonso, J. 2012. ATP as a mediator of erythrocyte-dependent regulation of skeletal muscle blood flow and oxygen delivery in humans. *The Journal of Physiology* 590: 5001-5013.
- Gorczynski, R.J., B. Klitzman, and B.R. Duling. 1978. Interrelations between contracting striated-muscle and precapillary microvessels. *American Journal of Physiology* 235:H494-H504.
- Gori, T., S. Grotti, S. Dragoni, M. Lisi, G. Di Stolfo, S. Sonnat, M. Fineschi, and J.D. Parker. 2010. Assessment of vascular function: Flow-mediated constriction complements the information of flow-mediated dilatation. *Heart* 96:141-147.
- Green, D.J., M.T. Hopman, J. Padilla, M.H. Laughlin, and D.H. Thijssen. 2017. Vascular adaptation to exercise in humans: Role of hemodynamic stimuli. *Physiology Reviews* 97(2):495-528.
- Halliwill, J.R., T.M. Buck, A.N. Laceywell, and S.A. Romero. 2013. Postexercise hypotension and sustained postexercise vasodilatation: What happens after we exercise? *Experimental Physiology* 98(1):7-18.
- Halliwill, J.R. Mechanisms and clinical implications of post-exercise hypotension in humans. 2001. *Exercise and Sports Science Reviews* 29(2):65-70.
- Hamann, J.J., J.B. Buckwalter, and P.S. Clifford. 2004. Vasodilatation is obligatory for contraction-induced hyperaemia in canine skeletal muscle. *Journal of Physiology* 557:1013-1020.
- Hamann, J.J., Z. Valic, J.B. Buckwalter, and P.S. Clifford. 2003. Muscle pump does not enhance blood flow in exercising skeletal muscle. *Journal of Applied Physiology* 94:6-10.
- Harms, C.A., M.A. Babcock, S.R. McClaran, D.F. Pegelow, G.A. Nিকেle, W.B. Nelson, and J.A. Dempsey. 1997. Respiratory muscle work compromises leg blood flow during maximal exercise. *Journal of Applied Physiology* 82:1573-1583.
- Hasegawa, N., S. Fujie, N. Horii, E. Miyamoto-Mikami, K. Tsuji, M. Uchida, T. Hamaoka, I. Tabata, and M. Iemitsu. 2018. Effects of different exercise modes on arterial stiffness and nitric oxide synthesis. *Medicine and Science in Sports Exercise* 50(6):1177-1185.
- Hecksteden, A., T. Grütters, and T. Meyer. 2013. Association between postexercise hypotension and long-term training-induced blood pressure reduction: A pilot study. *Clinical Journal of Sport Medicine* 23(1):58-63.
- Hegde, S.S., A.H. Goldfarb, and S. Hegde. 2001. Clotting and fibrinolytic activity change during the 1 h after a submaximal run. *Medicine and Science in Sports and Exercise* 33:887-892.
- Hester, R.L., A.C. Guyton, and B.J. Barber. 1982. Reactive and exercise hyperemia during high levels of adenosine infusion. *American Journal of Physiology* 243:H181-H186.
- Higginbotham, M.B., K.G. Morris, R.S. Williams, P.A. McHale, R.E. Coleman, and F.R. Cobb. 1986. Regulation of stroke volume during submaximal and maximal upright exercise in normal man. *Circulation Research* 58:281-291.
- Hill, L. 1898. Arterial pressure in man while sleeping, resting, working and bathing. *Journal of Physiology* 22, xxvi-xxx.
- Hjemdahl, P., P.T. Larsson, and N.H. Wallen. 1991. Effects of stress and beta-blockade on platelet function. *Circulation*

84:VI44-V161.

- Holwerda, S.W., R.E. Luehrs, L. DuBose, M.T. Collins, N.A. Wooldridge, A.K. Stroud, et al. 2019. Elevated muscle sympathetic nerve activity contributes to central artery stiffness in young and middle-age/older adults. *Hypertension* 73(5):1025-1035.
- Honig, C.R., C.L. Odoroff, and J.L. Frierson. 1980. Capillary recruitment in exercise: Rate, extent, uniformity, and relation to blood flow. *American Journal of Physiology* 238:H31-H42.
- Jae, S.Y., B.A. Franklin, J. Choo, Y.H. Choi, and B. Fernhall. 2015. Exaggerated exercise blood pressure response during treadmill testing as a predictor of future hypertension in men: A longitudinal study. *American Journal of Hypertension* 28(11):1362-1367.
- Jilma, B., E. Dirnberger, H.G. Eichler, B. Matulla, L. Schmetterer, S. Kapiotis, W. Speiser, and O.F. Wagner. 1997. Partial blockade of nitric oxide synthase blunts the exercise-induced increase of von willebrand factor antigen and of factor VIII in man. *Thrombosis and Haemostasis* 78:1268-1271.
- Johnson, J.M., and M.K. Park. 1981. Effect of upright exercise on threshold for cutaneous vasodilation and sweating. *Journal of Applied Physiology* 50:814-818.
- Jones, C.J., D.V. DeFily, J.L. Patterson, and W.M. Chilian. 1993. Endothelium-dependent relaxation competes with alpha 1- and alpha 2-adrenergic constriction in the canine epicardial coronary microcirculation. *Circulation* 87:1264-1274.
- Joyner, M.J., and D.P. Casey. 2015. Regulation of increased blood flow (hyperemia) to muscles during exercise: A hierarchy of competing physiological needs. *Physiology Reviews* 95(2):549-601.
- Kanstrup, I., and B. Ekblom. 1978. Influence of age and physical activity on central hemodynamics and lung function in active adults. *Journal of Applied Physiology* 45:709.
- Kellogg, D.L. Jr., J.M. Johnson, and W.A. Kosiba. 1991a. Competition between cutaneous active vasoconstriction and active vasodilation during exercise in humans. *American Journal of Physiology* 261:H1184-H1189.
- . 1991b. Control of internal temperature threshold for active cutaneous vasodilation by dynamic exercise. *Journal of Applied Physiology* 71:2476-2482.
- Kenney, W.L., C.G. Tankersley, D.L. Newswanger, and S.M. Puhl. 1991. Alpha 1-adrenergic blockade does not alter control of skin blood flow during exercise. *American Journal of Physiology* 260:H855-H861.
- Kenny, M.J., and D.R. Seals. 1993. Postexercise hypotension: Key features, mechanisms, and clinical significance. *Hypertension* 22:653-664.
- Kingwell, B.A., K.L. Berry, J.D. Cameron, G.L. Jennings, and A.M. Dart. 1997. Arterial compliance increases after moderate-intensity cycling. *American Journal of Physiology* 273:H2186-H2191.
- Krip, B., N. Gledhill, V. Jamnik, and D. Warburton. 1997. Effect of alterations in blood volume on cardiac function during maximal exercise. *Medicine and Science in Sports and Exercise* 29:1469-1476.
- La Gerche, A., A.T. Burns, D.J. Mooney, W.J. Inder, A.J. Taylor, J. Bogaert, A.I. Macisaac, H. Heidbuchel, D.L. Prior. 2012. Exercise-induced right ventricular dysfunction and structural remodelling in endurance athletes. *European Heart Journal* 33:998-1006.
- Lee, K.W., A.D. Blann, J. Ingram, K. Jolly, G.Y. Lip, and BRUM Investigators. 2005. Incremental shuttle walking is associated with activation of haemostatic and haemorheological markers in patients with coronary artery disease: The birmingham rehabilitation uptake maximization study (BRUM). *Heart* 91:1413-1417.
- Lin, H., and D.B. Young. 1995. Opposing effects of plasma epinephrine and norepinephrine on coronary thrombosis in vivo. *Circulation* 91:1135-1142.
- Little, T.L., E.C. Beyer, and B.R. Duling. 1995. Connexin 43 and connexin 40 gap junctional proteins are present in arteriolar smooth muscle and endothelium in vivo. *American Journal of Physiology* 268:H729-H739.
- Liu, S., J. Goodman, R. Nolan, S. Lacombe, and S. Thomas. 2012. Blood pressure responses to acute and chronic exercise are related in prehypertension. *Medicine and Science in Sports and Exercise* 44(9):1644-1652.
- Lord, R.N., V. Utomi, D.L. Oxborough, B.A. Curry, M. Brown, and K.P. George. 2018. Left ventricular function and mechanics following prolonged endurance exercise: An update and meta-analysis with insights from novel techniques. *European Journal of Applied Physiology* 118(7):1291-1299
- Maciel, B.C., L. Gallo Jr., J.A. Marin Neto, E.C. Lima Filho, and L.E. Martins. 1986. Autonomic nervous control of the heart rate during dynamic exercise in normal man. *Clinical Science* 71:457-460.
- Maeda, S., M. Iemitsu, T. Miyauchi, S. Kuno, M. Matsuda, and H. Tanaka. 2005. Aortic stiffness and aerobic exercise: mechanistic insight from microarray analyses. *Medicine and Science in Sports and Exercise* 37(10):1710-1716.
- Marshall, J.M., and H.C. Tandon. 1984. Direct observations of muscle arterioles and venules following contraction of skeletal muscle fibres in the rat. *Journal of Physiology* 350:447-459.
- Martin, C.M., A. Beltran-Del-Rio, A. Albrecht, R.R. Lorenz, and M.J. Joyner. 1996. Local cholinergic mechanisms mediate nitric oxide-dependent flow-induced vasorelaxation in vitro. *American Journal of Physiology* 270:H442-H446.
- McCloskey, D.I., and J.H. Mitchell. 1972. Reflex cardiovascular and respiratory responses originating in exercising muscle.

- Journal of Physiology* 224:173-186.
- Middleton, N., R. Shave, K. George, G. Whyte, E. Hart, and G. Atkinson. 2006. Left ventricular function immediately following prolonged exercise: A meta-analysis. *Medicine and Science in Sports and Exercise* 38:681-687.
- Mo, M., S.G. Eskin, and W.P. Schilling. 1991. Flow-mediated changes in Ca<sup>2+</sup> signaling of vascular endothelial cells: Effect of shear stress on ATP. *American Journal of Physiology* 260:H1698-H1707.
- Montain, S.J., and E.F. Coyle. 1992. Fluid ingestion during exercise increases skin blood flow independent of increases in blood volume. *Journal of Applied Physiology* 73:903-910.
- Montain, S.J., M.R. Ely, and S.N. Cheuvront. 2007. Marathon performance in thermally stressing conditions. *Sports Medicine* 37:320-323.
- Mortensen, S.P., E.A. Dawson, C.C. Yoshiga, M.K. Dalsgaard, R. Damsgaard, N.H. Secher, and J. Gonzalez-Alonso. 2005. Limitations to systemic and locomotor limb muscle oxygen delivery and uptake during maximal exercise in humans. *Journal of Physiology* 566:273-285.
- Mutter, A.F., A.B. Cooke, O. Saleh, Y.H. Gomez, and S.S. Daskalopoulou. 2017. A systematic review on the effect of acute aerobic exercise on arterial stiffness reveals a differential response in the upper and lower arterial segments. *Hypertension Research* 40(2):146-172.
- Nadel, E.R., E. Cafarelli, M.F. Roberts, and C.B. Wenger. 1979. Circulatory regulation during exercise in different ambient temperatures. *Journal of Applied Physiology* 46:430-437.
- Naka, K.K., A.C. Tweddel, D. Parthimos, A. Henderson, J. Goodfellow, and M.P. Frenneaux. 2003. Arterial distensibility: Acute changes following dynamic exercise in normal subjects. *American Journal of Physiology* 284:H970-H978.
- Niebauer, J., and J.P. Cooke. 1996. Cardiovascular effects of exercise: Role of endothelial shear stress. *Journal of the American College of Cardiology* 28:1652-1660.
- Noris, M., M. Morigi, R. Donadelli, S. Aiello, M. Foppollo, M. Todeschini, S. Orisio, G. Remuzzi, and A. Remuzzi. 1995. Nitric oxide synthesis by cultured endothelial cells is modulated by flow conditions. *Circulation* 76:536-543.
- O'Neal, W.T., W.T. Qureshi, M.J. Blaha, S.J. Keteyian, C.A. Brawner, and M.H. Al-Mallah. 2015. Systolic blood pressure response during exercise stress testing: The Henry Ford Exercise Testing (FIT) Project. *Journal of the American Heart Association* 4(5). pii: e002050
- Ogoh, S., P.J. Fadel, P. Nissen, Ø. Jans, C. Selmer, N.H. Secher, and P.B. Raven. 2003. Baroreflex-mediated changes in cardiac output and vascular conductance in response to alterations in carotid sinus pressure during exercise in humans. *Journal of Physiology* 550(Pt 1):317-324.
- Oxborough, D., R. Shave, D. Warburton, K. Williams, A. Oxborough, S. Charlesworth, H. Foulds, M.D. Hoffman, K. Birch, and K. George. 2011. Dilatation and dysfunction of the right ventricle immediately after ultraendurance exercise: Exploratory insights from conventional two-dimensional and speckle tracking echocardiography. *Circulation. Cardiovascular Imaging* 4:253-263.
- Petidis, K., S. Douma, M. Dumas, I. Basagiannis, K. Vogiatzis, and C. Zamboulis. 2008. The interaction of vasoactive substances during exercise modulates platelet aggregation in hypertension and coronary artery disease. *BMC Cardiovascular Disorders* 8:11.
- Phair, R.D., and H.V. Sparks. 1979. Adenosine content of skeletal muscle during active hyperemia and ischemic contraction. *American Journal of Physiology* 237:H1-H9.
- Plotnick, G.D., L.C. Becker, M.L. Fisher, G. Gerstenblith, D.G. Renlund, J.L. Fleg, M.L. Weisfeldt, and E.G. Lakatta. 1986. Use of the Frank-Starling mechanism during submaximal versus maximal upright exercise. *American Journal of Physiology* 251:H1101-H1105.
- Plow, E.F., and G.A. Marguerie. 1980. Induction of the fibrinogen receptor on human platelets by epinephrine and the combination of epinephrine and ADP. *Journal of Biological Chemistry* 255:10971-10977.
- Ralevic, V., P. Milner, O. Hudlicka, F. Kristek, and G. Burnstock. 1990. Substance P is released from the endothelium of normal and capsaicin-treated rat hind-limb vasculature, in vivo, by increased flow. *Circulation Research* 66:1178-1183.
- Raven, P.B., P.J. Fadel, and S. Ogoh. 2006. Arterial baroreflex resetting during exercise: A current perspective. *Experimental Physiology* 91(1):37-49.
- Raven, P.B., B.E. Young, and P.J. Fadel. 2019. Arterial baroreflex resetting during exercise in humans: Underlying signaling mechanisms. *Exercise and Sports Science Reviews* 47(3):129-141.
- Robinson, A.T., I.S. Fancher, A.M. Mahmoud, S.A. Phillips. 2018. Microvascular vasodilator plasticity after acute exercise. *Exercise and Sports Science Reviews* 46(1):48-55.
- Robinson, A.T., N.C. Franklin, E. Norkeviciute, J.T. Bian, J.C. Babana, M.R. Szczurek, and S.A. Phillips. 2016. Improved arterial flow-mediated dilation after exertion involves hydrogen peroxide in overweight and obese adults following aerobic exercise training. *Journal of Hypertension* 34(7):1309-1316.
- Rosenmeier, J.B., F.A. Dinunno, S.J. Fritzlar, and M.J. Joyner. 2003. Alpha1- and alpha2-adrenergic vasoconstriction is blunted in contracting human muscle. *Journal of Physiology* 547:971-976.

- Rossow, L., C.A. Fahs, M. Guerra, S.Y. Jae, K.S. Heffernan, and B. Fernhall. 2010. Acute effects of supramaximal exercise on carotid artery compliance and pulse pressure in young men and women. *European Journal of Applied Physiology* 110(4):729-737.
- Rotto, D.M., and M.P. Kaufman. 1988. Effect of metabolic products of muscular contraction on discharge of group III and IV afferents. *Journal of Applied Physiology* 64:2306-2313.
- Rowell, L.B. 1993. *Human cardiovascular control*. New York: Oxford University Press.
- Rowland, T. 2009. Endurance athletes' stroke volume response to progressive exercise: A critical review. *Sports Medicine* 39(8):687-695.
- Rowland, T., K. Heffernan, S.Y. Jae, G. Echols, and B.O. Fernhall. 2006. Tissue doppler assessment of ventricular function during cycling in 7- to 12-yr-old boys. *Medicine and Science in Sports and Exercise* 38:1216-1222.
- Rowland, T.W., and M.W. Roti. 2004. Cardiac responses to progressive upright exercise in adult male cyclists. *Journal of Sports Medicine and Physical Fitness* 44:178-185.
- Rowland, T., V. Unnithan, B. Fernhall, T. Baynard, and C. Lange. 2002. Left ventricular response to dynamic exercise in young cyclists. *Medicine & Science in Sports & Exercise* 34(4):637-642.
- Ruschitzka, F.T., G. Noll, and T.F. Luscher. 1997. The endothelium in coronary artery disease. *Cardiology* 88(Suppl 3):3-19.
- Sabbahi, A., R. Arena, L.A. Kaminsky, J. Myers, and S.A. Phillips. 2018. Peak blood pressure responses during maximum cardiopulmonary exercise testing: Reference standards from FRIEND (Fitness Registry and the Importance of Exercise: A National Database). *Hypertension* 71(2):229-236.
- Sakita, S., Y. Kishi, and F. Numano. 1997. Acute vigorous exercise attenuates sensitivity of platelets to nitric oxide. *Thrombosis Research* 87:461-471.
- Schroeder, E.C., S.M. Ranadive, H. Yan, A.D. Lane-Cordova, R.M. Kappus, M.D. Cook, and B. Fernhall. 2019. Effect of acute maximal exercise on vasodilatory function and arterial stiffness in African-American and white adults. *Journal of Hypertension* 37(6):1262-1268.
- Schultz, M.G., A. La Gerche, and J.E. Sharman. 2019. Blood pressure response to exercise and cardiovascular disease. *Current Hypertension Reports* 19(11):89.
- Schultz, M.G., P. Otahal, V.J. Cleland, L. Blizzard, T.H. Marwick, and J.E. Sharman. 2013. Exercise-induced hypertension, cardiovascular events, and mortality in patients undergoing exercise stress testing: a systematic review and meta-analysis. *American Journal of Hypertension* 26(3):357-366.
- Schultz, M.G., P. Otahal, D.S. Picone, and J.E. Sharman. 2015. Clinical relevance of exaggerated exercise blood pressure. *Journal of the American College of Cardiology* 66(16):1843-1845.
- Segal, S.S., and T.L. Jacobs. 2001. Role for endothelial cell conduction in ascending vasodilatation and exercise hyperaemia in hamster skeletal muscle. *Journal of Physiology* 536:937-946.
- Sharman, J.E., P. Boutouyrie, M.C. Perier, F. Thomas, C. Guibout, H. Khettab, B. Pannier, S. Laurent, X. Jouven, and J.P. Empana. 2018. Impaired baroreflex sensitivity, carotid stiffness, and exaggerated exercise blood pressure: A community-based analysis from the Paris Prospective Study III. *European Heart Journal* 39(7):599-606.
- Shattil, S.J., A. Budzynski, and M.C. Scrutton. 1989. Epinephrine induces platelet fibrinogen receptor expression, fibrinogen binding, and aggregation in whole blood in the absence of other excitatory agonists. *Blood* 73:150-158.
- Sheriff, D.D., and A.L. Hakeman. 2001. Role of speed vs. grade in relation to muscle pump function at locomotion onset. *Journal of Applied Physiology* 91:269-276.
- Sheriff, D.D., L.B. Rowell, and A.M. Scher. 1993. Is rapid rise in vascular conductance at onset of dynamic exercise due to muscle pump? *American Journal of Physiology* 265:H1227-H1234.
- Shoemaker, J.K., M.E. Tschakovsky, and R.L. Hughson. 1998. Vasodilation contributes to the rapid hyperemia with rhythmic contractions in humans. *Canadian Journal of Physiology and Pharmacology* 76:418-427.
- Sjøgaard, G., B. Kiens, K. Jorgensen, and B. Saltin. 1986. Intramuscular pressure, EMG and blood flow during low-level prolonged static contraction in man. *Acta Physiologica Scandinavica* 128:475-484.
- Spina, R.J., T. Ogawa, W.H. Martin 3rd, A.R. Coggan, J.O. Holloszy, and A.A. Ehsani. 1992. Exercise training prevents decline in stroke volume during exercise in young healthy subjects. *Journal of Applied Physiology* 72:2458-2462.
- Stöhr, E.J., R.E. Shave, A.L. Baggish, and R.B. Weiner. 2016. Left ventricular twist mechanics in the context of normal physiology and cardiovascular disease: A review of studies using speckle tracking echocardiography. *American Journal of Physiology* 311(3):H633-H644.
- Sugawara, J., H. Komine, K. Hayashi, M. Yoshizawa, T. Otsuki, N. Shimojo, T. Miyauchi, T. Yokoi, S. Maeda, and H. Tanaka. 2007. Systemic alpha-adrenergic and nitric oxide inhibition on basal limb blood flow: Effects of endurance training in middle-aged and older adults. *American Journal of Physiology. Heart and Circulatory Physiology* 293(3):H1466-1472.
- Szymanski, L.M., and R.R. Pate. 1994. Effects of exercise intensity, duration, and time of day on fibrinolytic activity in physically active men. *Medicine and Science in Sports and Exercise* 26:1102-1108.

- Szymanski, L.M., R.R. Pate, and J.L. Durstine. 1994. Effects of maximal exercise and venous occlusion on fibrinolytic activity in physically active and inactive men. *Journal of Applied Physiology* 77:2305-2310.
- Taylor, W.F., J.M. Johnson, and W.A. Kosiba. 1990. Roles of absolute and relative load in skin vasoconstrictor responses to exercise. *Journal of Applied Physiology* 69:1131-1136.
- Tschakovsky, M.E., A.M. Rogers, K.E. Pyke, N.R. Saunders, N. Glenn, S.J. Lee, T. Weissgerber, and E.M. Dwyer. 2004. Immediate exercise hyperemia in humans is contraction intensity dependent: Evidence for rapid vasodilation. *Journal of Applied Physiology* 96:639-644.
- Tschakovsky, M.E., J.K. Shoemaker, and R.L. Hughson. 1996. Vasodilation and muscle pump contribution to immediate exercise hyperemia. *American Journal of Physiology* 271:H1697-H1701.
- Tune, J.D., M.W. Gorman, and E.O. Feigl. 2004. Matching coronary blood flow to myocardial oxygen consumption. *Journal of Applied Physiology* 97:404-415.
- Uematsu, M., Y. Ohara, J.P. Navas, K. Nishida, T.J. Murphy, R.W. Alexander, R.M. Nerem, and D.G. Harrison. 1995. Regulation of endothelial cell nitric oxide synthase mRNA expression by shear stress. *American Journal of Physiology* 269:C1371-C1378.
- Vanhoutte, P.M. Endothelial adrenoceptors. 2001. *Journal of Pharmacological Cardiology* 38: 796-808.
- VanTeeffelen, J.W., and S.S. Segal. 2000. Effect of motor unit recruitment on functional vasodilatation in hamster retractor muscle. *Journal of Physiology* 524 Pt 1:267-278.
- Walker, K.L., N.R. Saunders, D. Jensen, J.L. Kuk, S.L. Wong, K.E. Pyke, E.M. Dwyer, and M.E. Tschakovsky. 2007. Do vasoregulatory mechanisms in exercising human muscle compensate for changes in arterial perfusion pressure? *American Journal of Physiology* 293:H2928-H2936.
- Wang, J.S., and L.J. Cheng. 1999. Effect of strenuous, acute exercise on alpha2-adrenergic agonist-potentiated platelet activation. *Arteriosclerosis, Thrombosis, and Vascular Biology* 19:1559-1565.
- Weiss, C., G. Seitel, and P. Bartsch. 1998. Coagulation and fibrinolysis after moderate and very heavy exercise in healthy male subjects. *Medicine and Science in Sports and Exercise* 30:246-251.
- Welsh, D.G., and S.S. Segal. 1997. Coactivation of resistance vessels and muscle fibers with acetylcholine release from motor nerves. *American Journal of Physiology* 273:H156-H163.
- Wigmore, D.M., K. Propert, and J.A. Kent-Braun. 2005. Blood flow does not limit skeletal muscle force production during incremental isometric contractions. *European Journal of Applied Physiology* 96:370-378.
- Wolfe, L.A., and D.A. Cunningham. 1982. Effects of chronic exercise on cardiac output and its determinants. *Canadian Journal of Physiology and Pharmacology* 60:1089-1097.
- Yamamoto, Y., R.L. Hughson, and Y. Nakamura. 1992. Autonomic nervous system responses to exercise in relation to ventilatory threshold. *Chest* 101(5 Suppl):206S-210S.
- Yan, H., M.A. Behun, M.D. Cook, S.M. Ranadive, A.D. Lane-Cordova, R.M. Kappus, J.A. Woods, K.R. Wilund, T. Baynard, J.R. Halliwill, and B. Fernhall. 2016. Differential post-exercise blood pressure responses between Blacks and Caucasians. *PLoS One*. 11(4):e0153445.
- Yan, H., S.M. Ranadive, K.S. Heffernan, A.D. Lane, R.M. Kappus, M.D. Cook, et al. 2014. Hemodynamic and arterial stiffness differences between African-Americans and Caucasians after maximal exercise. *American Journal of Physiology* 306(1):H60-H68.
- Yan, H., S.M. Ranadive, A.D. Lane-Cordova, R.M. Kappus, M.A. Behun, M.D. Cook, J.A. Woods, K.R. Wilund, T. Baynard, J.R. Halliwill, and B. Fernhall. 2017. Effect of acute aerobic exercise and histamine receptor blockade on arterial stiffness in African Americans and Caucasians. *Journal of Applied Physiology* 122(2):386-395.
- Zhou, B., R.K. Conlee, R. Jensen, G.W. Fellingham, J.D. George, and A.G. Fisher. 2001. Stroke volume does not plateau during graded exercise in elite male distance runners. *Medicine and Science in Sports and Exercise* 33:1849-1854.

## Chapter 10

- Ahmadi, A., V. Dabidi Roshan, and A. Jalali. 2020. Coronary vasomotion and exercise-induced adaptations in coronary artery disease patients: A systematic review and meta-analysis. *Journal for Scientific Research. Medical Sciences* 25:76.
- Ahmadi-Abhari, S., S. Sabia, M.J. Shipley, M. Kivimäki, A. Singh-Manoux, A. Tabak, et al. 2017. Physical activity, sedentary behavior, and long-term changes in aortic stiffness: The Whitehall II Study. *Journal of the American Heart Association* 6(8):e005974.
- Arbab-Zadeh, A., M. Perhonen, E. Howden, R.M. Peshock, R. Zhang, B. Adams-Huet, M.J. Haykowsky, and B.D. Levine. 2014. Cardiac remodeling in response to 1 year of intensive endurance training. *Circulation* 130(24):2152-2161.
- Areas, G.P.T., A. Mazzuco, F.R. Caruso, R.B. Jaenisch, R. Cabiddu, S.A. Phillips, R. Arena, A. Borghi-Silva. 2019. Flow-mediated dilation and heart failure: A review with implications to physical rehabilitation. *Heart Failure Reviews* 24(1):69-80
- Armstrong, R.B., and M.H. Laughlin. 1984. Exercise blood flow patterns within and among rat muscles after training. *American Journal of Physiology* 246:H59-H68.
- Ashor, A.W., J. Lara, M. Siervo M, C. Celis-Morales, C. Oggioni, D.G. Jakovljevic, and J.C. Mathers. 2015. Exercise modalities and endothelial function: A systematic review and dose-response meta-analysis of randomized controlled trials. *Sports Medicine* 45(2):279-296.
- Baggish, A.L., K. Yared, F.Wang, R.B. Weiner, A.M. Hutter Jr, M.H. Picard, and M.J. Wood. 2008. The impact of endurance exercise training on left ventricular systolic mechanics. *American Journal of Physiology. Heart and Circulatory Physiology* 295(3):H1109-H1116.
- Bahrainy, S., W.C. Levy, J.M. Busey, J.H. Caldwell, and J.R. Stratton. 2016. Exercise training bradycardia is largely explained by reduced intrinsic heart rate. *International Journal of Cardiology* 222:213-216.
- Barnes, J.N., and Q. Fu. 2018. Sex-specific ventricular and vascular adaptations to exercise. *Advances in Experimental Medicine and Biology* 1065:329-346.
- Barone, B.B., N.Y. Wang, A.C. Bacher, and K.J. Stewart. 2009. Decreased exercise blood pressure in older adults after exercise training: Contributions of increased fitness and decreased fatness. *British Journal of Sports Medicine* 43(1):52-56.
- Bartsch, P. 1999. Platelet activation with exercise and risk of cardiac events. *Lancet* 354:1747-1748.
- Baynard, T., H.M. Jacobs, C.M. Kessler, J.A. Kanaley, and B. Fernhall. 2007. Fibrinolytic markers and vasodilatory capacity following acute exercise among men of differing training status. *European Journal of Applied Physiology* 101:595-602.
- Beaumont, A.J., F.M. Grace, J.C. Richards, A.K. Campbell, and N.F. Sculthorpe. 2019. Aerobic training protects cardiac function during advancing age: A meta-analysis of four decades of controlled studies. *Sports Medicine* 49(2):199-219.
- Beaumont A., F. Grace, J. Richards, J. Hough, D. Oxborough, and N. Sculthorpe. 2017. Left ventricular speckle tracking-derived cardiac strain and cardiac twist mechanics in athletes: A systematic review and meta-analysis of controlled studies. *Sports Medicine* 47(6):1145-1170.
- Bersaoui, M., S.M. Baldew, N. Cornelis, J. Toelsie, and V.A. Cornelissen. 2020. The effect of exercise training on blood pressure in African and Asian populations: A systematic review and meta-analysis of randomized controlled trials. *European Journal of Preventive Cardiology* 27(5):457-472
- Bhella, P.S., J.L. Hastings, N. Fujimoto, S. Shibata, G. Carrick-Ranson, M.D. Palmer, K.N. Boyd, B. Adams-Huet, and B.D. Levine. 2014. Impact of lifelong exercise “dose” on left ventricular compliance and distensibility. *Journal of the American College of Cardiology* 64(12):1257-1266
- Bhuva, A.N., A. D’Silva, C. Torlasco, S. Jones, N. Nadarajan, J. Van Zalen, et al. 2020. Training for a first-time marathon reverses age-related aortic stiffening. *Journal of the American College of Cardiology* 75(1):60-71.
- Billman, G.E., K.L. Cagnoli, T. Csepe, N. Li, P. Wright, P.J. Mohler, and V.V. Fedorov. 2015. Exercise training-induced bradycardia: evidence for enhanced parasympathetic regulation without changes in intrinsic sinoatrial node function. *Journal of Applied Physiology* 118(11):1344-1355.
- Birk, G.K., E.A. Dawson, C. Atkinson, A. Haynes, N.T. Cable, D.H. Thijssen, and D.J. Green. 2012. Brachial artery adaptation to lower limb exercise training: role of shear stress. *Journal of Applied Physiology* 112: 1653-1658.
- Bloor, C.M. 2005. Angiogenesis during exercise and training. *Angiogenesis* 8:263-271.
- Boyett, M.R., Y. Wang, S. Nakao, J. Ariyaratnam, G. Hart, O. Monfredi, and A. D’Souza. 2017. Point: Exercise training-induced bradycardia is caused by changes in intrinsic sinus node function. *Journal of Applied Physiology* 123(3):684-685.
- Breisch, E.A., F.C. White, L.E. Nimmo, M.D. McKirnan, and C.M. Bloor. 1986. Exercise-induced cardiac hypertrophy: A correlation of blood flow and microvasculature. *Journal of Applied Physiology* 60:1259-1267.
- Brown, M.D. 2003. Exercise and coronary vascular remodelling in the healthy heart. *Experimental Physiology* 88:645-658.
- Campbell, K.A., M.J. Lipinski, A.C. Doran, M.D. Skafien, V. Fuster, and C.A. McNamara. 2012. Lymphocytes and the adventitial immune response in atherosclerosis. *Circulation Research* 110(6):889-900.
- Carrick-Ranson, G., N.M. Sloane, E.J. Howden, P.S. Bhella, S. Sarma, S. Shibata, N. Fujimoto, J.L. Hastings, and B.D. Levine. 2020. The effect of lifelong endurance exercise on cardiovascular structure and exercise function in women. *Journal of*

- Physiology* 598(13):2589-2605.
- Carter, H.H., E.A. Dawson, G.K. Birk, A.L. Spence, L.H. Naylor, N.T. Cable, D.H. Thijssen, and D.J. Green. 2013. Effect of SR manipulation on conduit artery dilation in humans. *Hypertension* 61(1):143-150.
- Carter, H.H., A.L. Spence, C.L. Atkinson, C.J. Pugh, L.H. Naylor, and D.J. Green. 2014. Repeated core temperature elevation induces conduit artery adaptation in humans. *European Journal of Applied Physiology* 114(4):859-865.
- Charifi, N., F. Kadi, L. Feasson, F. Costes, A. Geysant, and C. Denis. 2004. Enhancement of microvessel tortuosity in the vastus lateralis muscle of old men in response to endurance training. *Journal of Physiology* 554:559-569.
- Chesley, A., G.J. Heigenhauser, and L.L. Spriet. 1996. Regulation of muscle glycogen phosphorylase activity following short-term endurance training. *American Journal of Physiology* 270:E328-E335.
- Clarkson, P., H.E. Montgomery, M.J. Mullen, A.E. Donald, A.J. Powe, T. Bull, M. Jubb, M. World, and J.E. Deanfield. 1999. Exercise training enhances endothelial function in young men. *Journal of the American College of Cardiology* 33:1379-1385.
- Clausen, J.P., K. Klausen, B. Rasmussen, and J. Trap-Jensen. 1973. Central and peripheral circulatory changes after training of the arms or legs. *American Journal of Physiology* 225:675-682.
- Cohen, J.L., and K.R. Segal. 1985. Left ventricular hypertrophy in athletes: An exercise-echocardiographic study. *Medicine and Science in Sports and Exercise* 17:695-700.
- Collier, S.R., J.A. Kanaley, R. Carhart Jr., V. Frechette, M.M. Tobin, A.K. Hall, et al. 2008. Effect of 4 weeks of aerobic or resistance exercise training on arterial stiffness, blood flow and blood pressure in pre- and stage-1 hypertensives. *Journal of Human Hypertension* 22(10):678-686.
- Convertino, V.A. 1991. Blood volume: Its adaptation to endurance training. *Medicine and Science in Sports and Exercise* 23:1338-1348.
- Convertino, V.A., P.J. Brock, L.C. Keil, E.M. Bernauer, and J.E. Greenleaf. 1980. Exercise training-induced hypervolemia: Role of plasma albumin, renin, and vasopressin. *Journal of Applied Physiology* 48:665-669.
- Convertino, V.A., L.C. Keil, and J.E. Greenleaf. 1983. Plasma volume, rennin, and vasopressin responses to graded exercise after training. *Journal of Applied Physiology* 54:508-514.
- Currens, J.H., and P.D. White. 1961. Half century of running: Clinical, physiological and autopsy findings in the case of Clarence de Mar, "Mr. Marathoner." *New England Journal of Medicine* 265:988-993.
- Davrrath, L.R., S. Akselrod, I. Pinhas, E. Toledo, A. Beck, D. Elian, and M. Scheinowitz. 2006. Evaluation of autonomic function underlying slow postexercise heart rate recovery. *Medicine and Science in Sports and Exercise* 38(12):2095-2101.
- Delp, M.D. 1998. Differential effects of training on the control of skeletal muscle perfusion. *Medicine and Science in Sports and Exercise* 30:361-374.
- De Paz, J.A., J. Lasierra, J.G. Villa, E. Vilades, M.A. Martin-Nuno, and J. Gonzalez-Gallego. 1992. Changes in the fibrinolytic system associated with physical conditioning. *European Journal of Applied Physiology and Occupational Physiology* 65:388-393.
- Dinenno, F.A., H. Tanaka, K.D. Monahan, C.M. Clevenger, I. Eskurza, C.A. DeSouza, and D.R. Seals. 2001. Regular endurance exercise induces expansive arterial remodeling in the trained limbs of healthy men. *Journal of Physiology* 534:287-295.
- Edwards, D.G., R.S. Schofield, S.L. Lennon, G.L. Pierce, W.W. Nichols, and R.W. Braith. 2004. Effect of exercise training on endothelial function in men with coronary artery disease. *American Journal of Cardiology* 93:617-620.
- El-Sayed, M.S., X. Lin, and A.J. Rattu. 1995. Blood coagulation and fibrinolysis at rest and in response to maximal exercise before and after a physical conditioning programme. *Blood Coagulation and Fibrinolysis* 6:747-752.
- Fagard, R.H. 1996. Athlete's heart: A meta-analysis of the echocardiographic experience. *International Journal of Sports Medicine* 17 Suppl 3:S140-144.
- Ferguson, E.W., L.L. Bernier, G.R. Banta, J. Yu-Yahiro, and E.B. Schoemaker. 1987. Effects of exercise and conditioning on clotting and fibrinolytic activity in men. *Journal of Applied Physiology* 62:1416-1421.
- Ferguson, S., N. Gledhill, V.K. Jamnik, C. Wiebe, and N. Payne. 2001. Cardiac performance in endurance-trained and moderately active young women. *Medicine and Science in Sports and Exercise* 33:1114-1119.
- Fisslthaler, B., S. Dimmeler, C. Hermann, R. Busse, and I. Fleming. 2000. Phosphorylation and activation of the endothelial nitric oxide synthase by fluid shear stress. *Acta Physiologica Scandinavica* 168:81-88.
- Fraga, R., F.G. Franco, F. Roveda, L.N. de Matos, A.M. Braga, M.U. Rondon, et al. 2007. Exercise training reduces sympathetic nerve activity in heart failure patients treated with carvedilol. *European Journal of Heart Failure* 9(6-7):630-636.
- Fujimoto, N., J.L. Hastings, G. Carrick-Ranson, K.M. Shafer, S. Shibata, P.S. Bhella, et al. 2013. Cardiovascular effects of 1 year of alagebrium and endurance exercise training in healthy older individuals. *Circulation. Heart Failure* 6(6):1155-1164.
- Fujimoto, N., A. Prasad, J.L. Hastings, A. Arbab-Zadeh, P.S. Bhella, S. Shibata, D. Palmer, and B.D. Levine. 2010. Cardiovascular effects of 1 year of progressive and vigorous exercise training in previously sedentary individuals older than 65 years of age. *Circulation* 122(18):1797-1805.
- Gallo Jr., L., B.C. Maciel, J.A. Marin-Neto, and L.E. Martins. 1989. Sympathetic and parasympathetic changes in heart rate

- control during dynamic exercise induced by endurance training in man. *Brazilian Journal of Medical and Biological Research* 22:631-643.
- Gardenghi, G., M.U. Rondon, A.M. Braga, M.I. Scanavacca, C.E. Negrão, E. Sosa, and D.T. Hachul. 2007. The effects of exercise training on arterial baroreflex sensitivity in neurally mediated syncope patients. *European Heart Journal* 28(22):2749-2755.
- Glagov, S., E. Weisenberg, C.K. Zarins, R. Stankunavicius, and G.J. Kolettis. 1987. Compensatory enlargement of human atherosclerotic coronary arteries. *New England Journal of Medicine* 316:1371-1375.
- Gledhill, N., D. Cox, and R. Jamnik. 1994. Endurance athletes' stroke volume does not plateau: Major advantage is diastolic function. *Medicine and Science in Sports and Exercise* 26:1116-1121.
- Gliemann, L., R. Buess, M. Nyberg, H. Hoppeler, A. Odriozola, P. Thaning, et al. 2015. Capillary growth, ultrastructure remodelling and exercise training in skeletal muscle of essential hypertensive patients. *Acta physiologica* 214(2):210-220.
- Gliemann L., M. Nyberg, and Y. Hellsten. 2014. Nitric oxide and reactive oxygen species in limb vascular function: what is the effect of physical activity? *Free Radical Research* 48(1):71-83.
- Goto, C., Y. Higashi, M. Kimura, K. Noma, K. Hara, K. Nakagawa, M. Kawamura, K. Chayama, M. Yoshizumi, and I. Nara. 2003. Effect of different intensities of exercise on endothelium-dependent vasodilation in humans: Role of endothelium-dependent nitric oxide and oxidative stress. *Circulation* 108:530-535.
- Grassi, G., G. Seravalle, D.A. Calhoun, and G. Mancia. 1994. Physical training and baroreceptor control of sympathetic nerve activity in humans. *Hypertension* 23(3):294-301.
- Green, D.J., M.T. Hopman, J. Padilla, M.H. Laughlin, and D.H. Thijssen. 2017. Vascular adaptation to exercise in humans: Role of hemodynamic stimuli. *Physiology Reviews* 97(2):495-528.
- Green, D.J., and K.J. Smith. 2018. Effects of exercise on vascular function, structure, and health in humans. *Cold Spring Harbor Perspectives in Medicine* 8(4):a029819.
- Hambrecht, R., V. Adams, S. Erbs, A. Linke, N. Krankel, Y. Shu, Y. Baither, S. Gielen, H. Thiele, J.F. Gummert, F.W. Mohr, and G. Schuler. 2003. Regular physical activity improves endothelial function in patients with coronary artery disease by increasing phosphorylation of endothelial nitric oxide synthase. *Circulation* 107:3152-3158.
- Hammond, H.K., and V.F. Froelicher. 1985. The physiologic sequelae of chronic dynamic exercise. *Medical Clinics of North America* 69:21-39.
- Hayashi, K., J. Sugawara, H. Komine, S. Maeda, and T. Yokoi. 2005. Effects of aerobic exercise training on the stiffness of central and peripheral arteries in middle-aged sedentary men. *Japan Journal of Physiology* 55(4):235-239.
- Haynes, A., M.D. Linden, E. Robey, L.H. Naylor, P.N. Ainslie, K.L. Cox, et al. 2018. Beneficial impacts of regular exercise on platelet function in sedentary older adults: evidence from a randomized 6-mo walking trial. *Journal of Applied Physiology* 125(2):401-408.
- Heber, S., B. Fischer, M. Sallaberger-Lehner, M. Hausharter, H. Ocenasek, A. Gleiss, et al. 2020. Effects of high-intensity interval training on platelet function in cardiac rehabilitation: a randomised controlled trial. *Heart* 106(1):69-79.
- Heinicke, K., B. Wolfarth, P. Winchenbach, B. Biermann, A. Schmid, G. Huber, B. Friedmann, and W. Schmidt. 2001. Blood volume and hemoglobin mass in elite athletes of different disciplines. *International Journal of Sports Medicine* 22:504-512.
- Hellsten, Y., and M. Nyberg. Cardiovascular adaptations to exercise training. 2015. *Comprehensive Physiology* 6(1):1-32.
- Hellsten, Y., M. Nyberg, L.G. Jensen, and S.P. Mortensen. 2012. Vasodilator interactions in skeletal muscle blood flow regulation. *Journal of Physiology* 590(24):6297-6305.
- Hepple, R.T., S.L. Mackinnon, J.M. Goodman, S.G. Thomas, and M.J. Plyley. 1997. Resistance and aerobic training in older men: Effects on VO<sub>2</sub>peak and the capillary supply to skeletal muscle. *Journal of Applied Physiology* 82:1305-1310.
- Higashi, Y., S. Sasaki, S. Kurisu, A. Yoshimizu, N. Sasaki, H. Matsuura, G. Kajiyama, and T. Oshima. 1999. Regular aerobic exercise augments endothelium-dependent vascular relaxation in normotensive as well as hypertensive subjects: Role of endothelium-derived nitric oxide. *Circulation* 100:1194-1202.
- Holwerda, S.W., R.M. Restaino, and P.J. Fadel. 2015. Adrenergic and non-adrenergic control of active skeletal muscle blood flow: implications for blood pressure regulation during exercise. *Autonomic Neuroscience: Basic & Clinical* 188:24-31.
- Hoppeler, H., H. Howald, K. Conley, S.L. Lindstedt, H. Claassen, P. Vock, and E.R. Weibel. 1985. Endurance training in humans: Aerobic capacity and structure of skeletal muscle. *Journal of Applied Physiology* 59:320-327.
- Howden, E.J., G. Carrick-Ranson, S. Sarma, M. Hieda, N. Fujimoto, and B.D. Levine. 2018. Effects of sedentary aging and lifelong exercise on left ventricular systolic function. *Medicine and Science in Sports and Exercise* 50(3):494-501.
- Howden, E.J., M. Perhonen, R.M. Peshock, R. Zhang, A. Arbab-Zadeh, B. Adams-Huet, and B.D. Levine. 2015. Females have a blunted cardiovascular response to one year of intensive supervised endurance training. *Journal of Applied Physiology* 119(1):37-46.
- Howden, E.J., S. Sarma, J.S. Lawley, M. Opondo, W. Cornwell, D. Stoller, M.A. Urey, B. Adams-Huet, and B.D. Levine. 2018. Reversing the cardiac effects of sedentary aging in middle age—A randomized controlled trial: Implications for heart failure prevention. *Circulation* 137(15):1549-1560.

- Huai, P., H. Xun, K.H. Reilly, Y. Wang, Y. Ma, and B. Xi. 2013. Physical activity and risk of hypertension: A meta-analysis of prospective cohort studies. *Hypertension* 62(6):1021-1026.
- Huang, Y.C., H.H. Tsai, T.C. Fu, C.C. Hsu, and J.S. Wang. 2019. High-intensity interval training improves left ventricular contractile function. *Medicine and Science in Sports and Exercise* 51(7):1420-1428.
- Huonker, M., A. Schmid, A. Schmidt-Trucksass, D. Grathwohl, and J. Keul. 2003. Size and blood flow of central and peripheral arteries in highly trained able-bodied and disabled athletes. *Journal of Applied Physiology* 95:685-691.
- Hvas, A.M., and S. Neergaard-Petersen. 2018. Influence of exercise on platelet function in patients with cardiovascular disease. *Seminars in Thrombosis and Hemostasis* 44(8):802-812.
- Imai, K., H. Sato, M. Hori, H. Kusuoka, H. Ozaki, H. Yokoyama, H. Takeda, M. Inoue, and T. Kamada. 1994. Vagally mediated heart rate recovery after exercise is accelerated in athletes but blunted in patients with chronic heart failure. *Journal of the American College of Cardiology* 24:1529-1535.
- Jahangard, T., G. Torkaman, B. Ghosheh, M. Hedayati, and A. Dibaj. 2009. The effect of short-term aerobic training on coagulation and fibrinolytic factors in sedentary healthy postmenopausal women. *Maturitas* 64(4):223-227.
- Kalliokoski, K.K., V. Oikonen, T.O. Takala, H. Sipila, J. Knuuti, and P. Nuutila. 2001. Enhanced oxygen extraction and reduced flow heterogeneity in exercising muscle in endurance-trained men. *American Journal of Physiology* 280:E1015-E1021.
- Katona, P.G., M. McLean, D.H. Dighton, and A. Guz. 1982. Sympathetic and parasympathetic cardiac control in athletes and nonathletes at rest. *Journal of Applied Physiology* 52:1652-1657.
- Kelley, G., and Z.V. Tran. 1995. Aerobic exercise and normotensive adults: A meta-analysis. *Medicine and Science in Sports and Exercise* 27:1371-1377.
- Kenney, W.L. 1985. Parasympathetic control of resting heart rate: Relationship to aerobic power. *Medicine and Science in Sports and Exercise* 17:451-455.
- Kokkinos, P.F., P. Narayan, J.A. Collieran, A. Pittaras, A. Notargiacomo, D. Reda, and V. Papademetriou. 1995. Effects of regular exercise on blood pressure and left ventricular hypertrophy in African-American men with severe hypertension. *New England Journal of Medicine* 333(22):1462-1467.
- Kozakova, M., F. Galetta, L. Gregorini, G. Bigalli, F. Franzoni, C. Giusti, and C. Palombo. 2000. Coronary vasodilator capacity and epicardial vessel remodeling in physiological and hypertensive hypertrophy. *Hypertension* 36:343-349.
- Kraft, K.A., R. Arena, J.A. Arrowood, and D.Y. Fei. 2007. High aerobic capacity does not attenuate aortic stiffness in hypertensive subjects. *American Heart Journal* 154(5):976-982.
- Krip, B., N. Gledhill, V. Jamnik, and D. Warburton. 1997. Effect of alterations in blood volume on cardiac function during maximal exercise. *Medicine and Science in Sports and Exercise* 29:1469-1476.
- La Gerche, A., H. Heidbüchel, A.T. Burns, D.J. Mooney, A.J. Taylor, H.B. Pfluger, W.J. Inder, A.I. Macisaac, and D.L. Prior. 2011. Disproportionate exercise load and remodeling of the athlete's right ventricle. *Medicine and Science in Sports and Exercise* 43(6):974-981.
- Lane-Cordova, A.D., S.M. Ranadive, R.M. Kappus, M.D. Cook, S.A. Phillips, J.A. Woods, et al. 2016. Aging, not age-associated inflammation, determines blood pressure and endothelial responses to acute inflammation. *Journal of Hypertension* 34(12):2402-2409.
- Laterza, M.C., L.D. de Matos, I.C. Trombetta, A.M. Braga, F. Roveda, M.J. Alves, et al. 2007. Exercise training restores baroreflex sensitivity in never-treated hypertensive patients. *Hypertension* 49(6):1298-1306.
- Laughlin, M.H., D.K. Bowles, and D.J. Duncker. 2012. The coronary circulation in exercise training. *American Journal of Physiology. Heart and Circulatory Physiology* 302(1):H10-H23
- Laughlin, M.H., J.S. Pollock, J.F. Amann, M.L. Hollis, C.R. Woodman, and E.M. Price. 2001. Training induces nonuniform increases in eNOS content along the coronary arterial tree. *Journal of Applied Physiology* 90:501-510.
- Lee, K.W., and G.Y. Lip. 2003. Effects of lifestyle on hemostasis, fibrinolysis, and platelet reactivity: a systematic review. *Archives of Internal Medicine* 163(19):2368-2392.
- Letnes, J.M., B. Nes, K. Vaardal-Lunde, M.B. Slette, H.E. Mølmen-Hansen, S.T. Aspenes, A. Støylen, U. Wisløff, and D. Dalen. 2020. Left atrial volume, cardiorespiratory fitness, and diastolic function in healthy individuals: The HUNT Study, Norway. *Journal of the American Heart Association* 9(3):e014682.
- Libby, P., P.M. Ridker, and A. Maseri. 2002. Inflammation and atherosclerosis. *Circulation* 105:1135-1143.
- Libby, P., and P. Theroux. 2005. Pathophysiology of coronary artery disease. *Circulation* 111:3481-3488.
- Lin, X., X. Zhang, J. Guo, C.K. Roberts, S. McKenzie, W.C. Wu, S. Liu, and Y. Song. 2015. Effects of exercise training on cardiorespiratory fitness and biomarkers of cardiometabolic health: A systematic review and meta-analysis of randomized controlled trials. *Journal of the American Heart Association* 4(7):e002014.
- Liu, X., D. Zhang, Y. Liu, X. Sun, C. Han, B. Wang, Y, et al. 2017. Dose-response association between physical activity and incident hypertension: A systematic review and meta-analysis of cohort studies. *Hypertension* 69(5):813-820.
- Lloyd, P.G., B.M. Prior, H. Li, H.T. Yang, and R.L. Terjung. 2005. VEGF receptor antagonism blocks arteriogenesis, but only

- partially inhibits angiogenesis, in skeletal muscle of exercise-trained rats. *American Journal of Physiology* 88:H759-H768.
- Maciel, B.C., L. Gallo Jr., J.A. Marin Neto, E.C. Lima Filho, J.T. Filho, and J.C. Manco. 1985. Parasympathetic contribution to bradycardia induced by endurance training in man. *Cardiovascular Research* 19:642-648.
- Maeda, S., T. Miyauchi, T. Kakiyama, J. Sugawara, M. Iemitsu, Y. Irukayama-Tomobe, H. Murakami, Y. Kumagai, S. Kuno, and M. Matsuda. 2001. Effects of exercise training of 8 weeks and detraining on plasma levels of endothelium-derived factors, endothelin-1 and nitric oxide, in healthy young humans. *Life Science* 69:1005-1016.
- Matsuzawa, Y. T.G. Kwon, R.J. Lennon, L.O. Lerman, and A. Lerman. 2015. Prognostic value of flow-mediated vasodilation in brachial artery and fingertip artery for cardiovascular events: A systematic review and meta-analysis. *Journal of the American Heart Association* 4(11):e002270.
- McLay, K.M., J.E. Gilbertson, S. Pogliaghi, D.H. Paterson, and J.M. Murias. 2016. Vascular responsiveness measured by tissue oxygen saturation reperfusion slope is sensitive to different occlusion durations and training status. *Experimental Physiology* 101(10):1309-1318.
- Mo, M., S.G. Eskin, and W.P. Schilling. 1991. Flow-mediated changes in Ca<sup>2+</sup> signaling of vascular endothelial cells: Effect of shear stress on ATP. *American Journal of Physiology* 260:H1698-H1707.
- Modena, M.G., L. Bonetti, F. Coppi, F. Bursi, R. Rossi. 2002. Prognostic role of reversible endothelial dysfunction in hypertensive postmenopausal women. *Journal of the American College of Cardiology* 40(3):505-510
- Montero, D. 2015. Arterial dilator function in athletes: Present and future perspectives. *Frontiers in Physiology* 6:163.
- Montero, D., A. Breenfeldt-Andersen, L. Oberholzer, and T. Haider. 2017. Effect of exercise on arterial stiffness: Is there a ceiling effect? *American Journal of Hypertension* 30(11):1069-1072.
- Montero, D., E. Roche, and A. Martinez-Rodriguez. 2014. The impact of aerobic exercise training on arterial stiffness in pre- and hypertensive subjects: a systematic review and meta-analysis. *International Journal of Cardiology* 173(3):361-368.
- Montero, D., G. Walther, A. Perez-Martin, C.S. Mercier, S. Gayraud, N. Vicente-Salar, et al. 2014. Effects of a lifestyle program on vascular reactivity in macro- and microcirculation in severely obese adolescents. *Journal of Clinical Endocrinology and Metabolism* 99(3):1019-1026.
- Moreau, K.L., A.J. Donato, D.R. Seals, C.A. DeSouza, and H. Tanaka. 2003. Regular exercise, hormone replacement therapy and the age-related decline in carotid arterial compliance in healthy women. *Cardiovascular Research* 57(3):861-868.
- Moreau, K.L., B.L. Stauffer, W.M. Kohrt, and D.R. Seals DR. 2013. Essential role of estrogen for improvements in vascular endothelial function with endurance exercise in postmenopausal women. *The Journal of Clinical Endocrinology and Metabolism* 98(11):4507-4515.
- Muller, J.M., P.R. Myers, and M.H. Laughlin. 1994. Vasodilator responses of coronary resistance arteries of exercise-trained pigs. *Circulation* 89:2308-2314.
- Murias, J.M., J.M. Kowalchuk, and D.H. Paterson. 2010. Mechanisms for increases in V̇O<sub>2</sub>max with endurance training in older and young women. *Medicine and Science in Sports and Exercise* 42(10):1891-1898.
- Naci, H., M. Salcher-Konrad, S. Dias, M.R. Blum, S.A. Sahoo, D. Nunan, J.P.A. Ioannidis. 2019. How does exercise treatment compare with antihypertensive medications? A network meta-analysis of 391 randomised controlled trials assessing exercise and medication effects on systolic blood pressure. *British Journal of Sports Medicine* 53(14):859-869.
- Nakano, T., R. Tominaga, I. Nagano, H. Okabe, and H. Yasui. 2000. Pulsatile flow enhances endothelium-derived nitric oxide release in the peripheral vasculature. *American Journal of Physiology* 278:H1098-H1104.
- Naylor, L.H., H. Carter, M.G. FitzSimons, N.T. Cable, D.H. Thijssen, and D.J. Green. 2011. Repeated increases in blood flow, independent of exercise, enhance conduit artery vasodilator function in humans. *American Journal of Physiology. Heart and Circulatory Physiology* 300(2):H664-H669.
- Noone, C., J. Leahy, E.C. Morrissey, J. Newell, M. Newell, C.P. Dwyer, et al. 2020. Comparative efficacy of exercise and anti-hypertensive pharmacological interventions in reducing blood pressure in people with hypertension: A network meta-analysis. *European Journal of Preventive Cardiology* 27(3):247-255.
- Oltman, C.L., J.L. Parker, H.R. Adams, and M.H. Laughlin. 1992. Effects of exercise training on vasomotor reactivity of porcine coronary arteries. *Journal of Physiology* 263:H372-H382.
- Oltman, C.L., J.L. Parker, and M.H. Laughlin. 1995. Endothelium-dependent vasodilation of proximal coronary arteries from exercise-trained pigs. *Journal of Applied Physiology* 79:33-40.
- Orlova, I.A., E.Y. Nuraliev, E.B. Yarovaya, and F.T. Ageev. 2010. Prognostic value of changes in arterial stiffness in men with coronary artery disease. *Vascular Health and Risk Management* 6:1015-1021.
- Oscai, L.B., B.T. Williams, and B.A. Hertig. 1968. Effect of exercise on blood volume. *Journal of Applied Physiology* 24:622-624.
- Parker, J.L., C.L. Oltman, J.M. Muller, P.R. Myers, H.R. Adams, and M.H. Laughlin. 1994. Effects of exercise training on regulation of tone in coronary arteries and arterioles. *Medicine and Science in Sports and Exercise* 26:1252-1261.
- Peçanha, T., N.D. Silva-Júnior, and C.L. Forjaz. 2014. Heart rate recovery: Autonomic determinants, methods of assessment and association with mortality and cardiovascular diseases. *Clinical Physiology and Functional Imaging* 34(5):327-339.

- Pescatello, L.S., D.M. Buchner, J.M. Jakicic, K.E. Powell, W.E. Kraus, B. Bloodgood, et al.; 2018 Physical Activity Guidelines Advisory Committee. 2019. Physical activity to prevent and treat hypertension: A systematic review. *Medicine and Science in Sports and Exercise* 51(6):1314-1323.
- Pescatello, L.S., B.A. Franklin, R. Fagard, W.B. Farquhar, G.A. Kelley, C.A. Ray, and American College of Sports Medicine. 2004. American College of Sports Medicine position stand. Exercise and hypertension. *Medicine and Science in Sports and Exercise* 36:533-553.
- Pierce, G.L. 2017. Aortic stiffness in aging and hypertension: Prevention and treatment with habitual aerobic exercise. *Current Hypertension Reports* 19(11):90.
- Pierce, G.L., I. Eskurza, A.E. Walker, T.N. Fay, and D.R. Seals. 2011. Sex-specific effects of habitual aerobic exercise on brachial artery flow-mediated dilation in middle-aged and older adults. *Clinical Science (London, England)* 120(1):13-23.
- Pierce, G.L., L.A. Lesniewski, B.R. Lawson, S.D. Beske, and D.R. Seals. 2009. Nuclear factor- $\kappa$ B activation contributes to vascular endothelial dysfunction via oxidative stress in overweight/obese middle-aged and older humans. *Circulation* 119(9):1284-1292.
- Platiša, M.M., T. Bojić, S. Mazić, and A. Kalauzi. 2019. Generalized Poincaré plots analysis of heart period dynamics in different physiological conditions: Trained vs. untrained men. *PLoS One*. 14(7):e0219281
- Plowman, S.A., and D.L. Smith. 2008. *Exercise physiology for health, fitness, and performance*. Baltimore: Lippincott, Williams, & Wilkins.
- Pluim, B.M., A.H. Zwinderman, A. van der Laarse, and E.E. van der Wall. 2000. The athlete's heart. A meta-analysis of cardiac structure and function. *Circulation* 101:336-344.
- Poole, D.C. 2019. Edward F. Adolph Distinguished Lecture. Contemporary model of muscle microcirculation: Gateway to function and dysfunction. *Journal of Applied Physiology* 127(4):1012-1033.
- Poole, D.C., O. Mathieu-Costello, and J.B. West. 1989. Capillary tortuosity in rat soleus muscle is not affected by endurance training. *American Journal of Physiology* 256:H1110-H1116.
- Prior, B.M., P.G. Lloyd, H.T. Yang, and R.L. Terjung. 2003. Exercise-induced vascular remodeling. *Exercise and Sport Sciences Reviews* 31:26-33.
- Proctor, D.N., J.D. Miller, N.M. Dietz, C.T. Minson, and M.J. Joyner. 2001. Reduced submaximal leg blood flow after high-intensity aerobic training. *Journal of Applied Physiology* 91:2619-2627.
- Putman, C.T., N.L. Jones, E. Hultman, M.G. Hollidge-Horvat, A. Bonen, D.R. McConachie, and G.J. Heigenhauser. 1998. Effects of short-term submaximal training in humans on muscle metabolism in exercise. *American Journal of Physiology* 275:E132-E139.
- Ranadive, S.M., H. Yan, A.D. Lane, R.M. Kappus, M.D. Cook, P. Sun, et al. 2016. Aerobic exercise training and arterial changes in African Americans versus Caucasians. *Medicine and Science in Sports and Exercise* 48(1):90-97.
- Roca, J., A.G. Agusti, A. Alonso, D.C. Poole, C. Viegas, J.A. Barbera, R. Rodriguez-Roisin, A. Ferrer, and P.D. Wagner. 1992. Effects of training on muscle O<sub>2</sub> transport at VO<sub>2</sub>max. *Journal of Applied Physiology* 73:1067-1076.
- Rowland, T.W., and M.W. Roti. 2004. Cardiac responses to progressive upright exercise in adult male cyclists. *Journal of Sports Medicine and Physical Fitness* 44:178-185.
- Ruschitzka, F.T., G. Noll, and T.F. Luscher. 1997. The endothelium in coronary artery disease. *Cardiology* 88(Suppl 3):3-19.
- Sackett, J.R., D.P. Farrell, and P.R. Nagelkirk. 2020. Hemostatic adaptations to high intensity interval training in healthy adult men. *International Journal of Sports Medicine* 41(12):867-872.
- Sakuragi, S., and Y. Sugiyama. 2006. Effects of daily walking on subjective symptoms, mood and autonomic nervous function. *Journal of Physiological Anthropology* 25:281-289.
- Schmidt, W., K. Heinicke, J. Rojas, J. Manuel Gomez, M. Serrato, M. Mora, B. Wolfarth, A. Schmid, and J. Keul. 2002. Blood volume and hemoglobin mass in endurance athletes from moderate altitude. *Medicine and Science in Sports and Exercise* 34:1934-1940.
- Schmidt-Trucksass, A., A. Schmid, B. Dorr, and M. Huonker. 2003. The relationship of left ventricular to femoral artery structure in male athletes. *Medicine and Science in Sports and Exercise* 35:214-219; discussion 220.
- Schultz, M.G., J.L. Hare, T.H. Marwick, M. Stowasser, and J.E. Sharman. 2011. Masked hypertension is "unmasked" by low-intensity exercise blood pressure. *Blood Pressure* 20(5):284-289.
- Schultz, M.G., A. La Gerche, and J.E. Sharman. 2019. Blood pressure response to exercise and cardiovascular disease. *Current Hypertension Reports* 19(11):89.
- Scott, A.S., A. Eberhard, D. Ofir, G. Bencherit, T.P. Dinh, P. Calabrese, V. Lesiuk, and H. Perrault. 2004. Enhanced cardiac vagal efferent activity does not explain training-induced bradycardia. *Autonomic Neuroscience: Basic and Clinical* 112:60-68.
- Seals, D.R. 2014. Edward F. Adolph Distinguished Lecture: The remarkable anti-aging effects of aerobic exercise on systemic arteries. *Journal of Applied Physiology* 117(5):425-439.
- Sessa, W.C., K. Pritchard, N. Seyedi, J. Wang, and T.H. Hintze. 1994. Chronic exercise in dogs increases coronary vascular nitric

- oxide production and endothelial cell nitric oxide synthase gene expression. *Circulation Research* 74:349-353.
- Shi, X., G.H. Stevens, B.H. Foresman, S.A. Stern, and P.B. Raven. 1995. Autonomic nervous system control of the heart: Endurance exercise training. *Medicine and Science in Sports and Exercise* 27:1406-1413.
- Shibata, S., N. Fujimoto, J.L. Hastings, G. Carrick-Ranson, P.S. Bhella, C.M. Hearon Jr, B.D. Levine. 2018. The effect of lifelong exercise frequency on arterial stiffness. *Journal of Physiology* 596(14):2783-2795.
- Shin, K., H. Minamitani, S. Onishi, H. Yamazaki, and M. Lee. 1997. Autonomic differences between athletes and nonathletes: Spectral analysis approach. *Medicine and Science in Sports and Exercise* 29:1482-1490.
- Shoemaker, J.K., H.J. Green, M. Ball-Burnett, and S. Grant. 1997. Relationships between fluid and electrolyte hormones and plasma volume during exercise with training and detraining. *Medicine and Science in Sports and Exercise* 30:497-505.
- Smith, M.L., D.L. Hudson, H.M. Graitzer, and P.B. Raven. 1989. Exercise training bradycardia: The role of autonomic balance. *Medicine and Science in Sports and Exercise* 21:40-44.
- Soares, R.N., M.A. George, D.N. Proctor, and J.M. Murias. 2018. Differences in vascular function between trained and untrained limbs assessed by near-infrared spectroscopy. *European Journal of Applied Physiology* 118(10):2241-2248.
- Soares, R.N., J.M. Murias, F. Saccone, L. Puga, G. Moreno, M. Resnik, and G.F. De Roia. 2019. Effects of a rehabilitation program on microvascular function of CHD patients assessed by near-infrared spectroscopy. *Physiological Reports* 7(11):e14145.
- Speiser, W., W. Langer, A. Pschaick, E. Selmayr, B. Ibe, P.E. Nowacki, and G. Muller-Berghaus. 1988. Increased blood fibrinolytic activity after physical exercise: Comparative study in individuals with different sporting activities and in patients after myocardial infarction taking part in a rehabilitation sports program. *Thrombosis Research* 51:543-555.
- Spence, A.L., H.H. Carter, L.H. Naylor, and D.J. Green. 2013. A prospective randomized longitudinal study involving 6 months of endurance or resistance exercise. Conduit artery adaptation in humans. *Journal of Physiology* 591(5):1265-1275.
- Spence, A.L., L.H. Naylor, H.H. Carter, C.L. Buck, L. Dembo, C.P. Murray, P. Watson, D. Oxborough, K.P. George, and D.J. Green. 2011. A prospective randomised longitudinal MRI study of left ventricular adaptation to endurance and resistance exercise training in humans. *Journal of Physiology* 589(Pt 22):5443-5452.
- Spier, S.A., M.D. Delp, C.J. Meininger, A.J. Donato, M.W. Ramsey, and J.M. Muller-Delp. 2004. Effects of ageing and exercise training on endothelium-dependent vasodilatation and structure of rat skeletal muscle arterioles. *Journal of Physiology* 556:947-958.
- Spina, R.J., M.M. Chi, M.G. Hopkins, P.M. Nemeth, O.H. Lowry, and J.O. Holloszy. 1996. Mitochondrial enzymes increase in muscle in response to 7-10 days of cycle exercise. *Journal of Applied Physiology* 80:2250-2254.
- Spina, R.J., T. Ogawa, W.H. Martin 3rd, J.O. Holloszy, and A.A. Ehsani. 1993. Differences in cardiovascular adaptations to endurance exercise training between older men and women. *Journal of Applied Physiology* 75(2):849-855.
- Starritt, E.C., D. Angus, and M. Hargreaves. 1999. Effect of short-term training on mitochondrial ATP production rate in human skeletal muscle. *Journal of Applied Physiology* 86:450-454.
- Stratton, J.R., W.L. Chandler, R.S. Schwartz, M.D. Cerqueira, W.C. Levy, S.E. Kahn, et al. 1991. Effects of physical conditioning on fibrinolytic variables and fibrinogen in young and old healthy adults. *Circulation* 83(5):1692-1697.
- Sun, D., A. Huang, A. Koller, and G. Kaley. 1994. Short-term daily exercise activity enhances endothelial NO synthesis in skeletal muscle arterioles of rats. *Journal of Applied Physiology* 76:2241-2247.
- Suzuki, T., K. Yamauchi, Y. Yamada, T. Furumichi, H. Furui, J. Tsuzuki, H. Hayashi, I. Sotobata, and H. Saito. 1992. Blood coagulability and fibrinolytic activity before and after physical training during the recovery phase of acute myocardial infarction. *Clinical Cardiology* 15:358-364.
- Swardfager, W., N. Herrmann, S. Cornish, G. Mazereeuw, S. Marzolini, L. Sham, and K.L. Lanctôt. 2012. Exercise intervention and inflammatory markers in coronary artery disease: A meta-analysis. *American Heart Journal* 163(4):666-676.e1-3.
- Szymanski, L.M., C.M. Kessler, and B. Fernhall. 2005. Relationship of physical fitness, hormone replacement therapy, and hemostatic risk factors in postmenopausal women. *Journal of Applied Physiology* 98(4):1341-1348.
- Szymanski, L.M., R.R. Pate, and J.L. Durstine. 1994. Effects of maximal exercise and venous occlusion on fibrinolytic activity in physically active and inactive men. *Journal of Applied Physiology* 77:2305-2310.
- Tanaka, H., F.A. Dinunno, K.D. Monahan, C.M. Clevenger, C.A. DeSouza, and D.R. Seals. 2000. Aging, habitual exercise, and dynamic arterial compliance. *Circulation* 102(11):1270-1275.
- Thijssen, D.H., N.T. Cable, and D.J. Green. 2012. Impact of exercise training on arterial wall thickness in humans. *Clinical Science (London, England)* 122(7):311-322.
- Thijssen, D.H., T.M. Tinken, N. Hopkins, E.A. Dawson, N.T. Cable, and D.J. Green. 2011. The impact of exercise training on the diameter dilator response to forearm ischaemia in healthy men. *Acta physiologica* 201(4):427-434.
- Tinken, T.M., D.H. Thijssen, N. Hopkins, E.A. Dawson, N.T. Cable, and D.J. Green. 2010. Shear stress mediates endothelial adaptations to exercise training in humans. *Hypertension* 55(2):312-318.
- Uematsu, M., Y. Ohara, J.P. Navas, K. Nishida, T.J. Murphy, R.W. Alexander, R.M. Nerem, and D.G. Harrison. 1995.

- Regulation of endothelial cell nitric oxide synthase mRNA expression by shear stress. *American Journal of Physiology* 269:C1371-C1378.
- Utomi, V., D. Oxborough, G.P. Whyte, J. Somauroo, S. Sharma, R. Shave, G. Atkinson, and K. George. 2013. Systematic review and meta-analysis of training mode, imaging modality and body size influences on the morphology and function of the male athlete's heart. *Heart* 99(23):1727-1733.
- Vaitkevicius, P.V., J.L. Fleg, J.H. Engel, F.C. O'Connor, J.G. Wright, L.E. Lakatta, F.C. Yin, E.G. Lakatta. 1993. Effects of age and aerobic capacity on arterial stiffness in healthy adults. *Circulation* 88(4 Pt 1):1456-1462.
- Van den Burg, P.J., J.E. Hospers, M. van Vliet, W.L. Mosterd, B.N. Bouma, and I.A. Huisveld. 1997. Effect of endurance training and seasonal fluctuation on coagulation and fibrinolysis in young sedentary men. *Journal of Applied Physiology* 82:613-620.
- Van Hoof, R., P. Hespel, R. Fagard, P. Lijnen, J. Staessen, and A. Amery. 1989. Effect of endurance training on blood pressure at rest, during exercise and during 24 hours in sedentary men. *American Journal of Cardiology* 63:945-949.
- Vinereanu, D., N. Florescu, N. Sculthorpe, A.C. Tweddel, M.R. Stephens, and A.G. Fraser. 2001. Differentiation between pathologic and physiologic left ventricular hypertrophy by tissue doppler assessment of long-axis function in patients with hypertrophic cardiomyopathy or systemic hypertension and in athletes. *American Journal of Cardiology* 88:53.
- Vlachopoulos, C., K. Aznaouridis, and C. Stefanadis. 2010. Prediction of cardiovascular events and all-cause mortality with arterial stiffness: A systematic review and meta-analysis. *Journal of the American College of Cardiology* 55(13):1318-1327.
- Walker, A.E., R.E. Kaplon, G.L. Pierce, M.J. Nowlan, and D.R. Seals. 2014. Prevention of age-related endothelial dysfunction by habitual aerobic exercise in healthy humans: Possible role of nuclear factor  $\kappa$ B. *Clinical Science (London, England)* 127(11):645-654.
- Wang, J.S., C.J. Jen, and H.I. Chen. 1995. Effects of exercise training and deconditioning on platelet function in men. *Arteriosclerosis, Thrombosis, and Vascular Biology* 15:1668-1674.
- . 1997. Effects of chronic exercise and deconditioning on platelet function in women. *Journal of Applied Physiology* 83:2080-2085.
- Wang, J., M.S. Wolin, and T.H. Hintze. 1993. Chronic exercise enhances endothelium-mediated dilation of epicardial coronary artery in conscious dogs. *Circulation Research* 73:829-838.
- Way, K.L., R.N. Sultana, A. Sabag, M.K. Baker, and N.A. Johnson. 2019. The effect of high intensity interval training versus moderate intensity continuous training on arterial stiffness and 24h blood pressure responses: A systematic review and meta-analysis. *Journal of Science and Medicine in Sport* 22(4):385-391.
- Warburton, D.E., M.J. Haykowsky, H.A. Quinney, D. Blackmore, K.K. Teo, D.A. Taylor, J. McGavock, and D.P. Hume. 2004. Blood volume expansion and cardiorespiratory function: Effects of training modality. *Medicine and Science in Sports and Exercise* 36:991-1000.
- Weight, L.M., M. Klein, T.D. Noakes, and P. Jacobs. 1992. "Sports anemia"—a real or apparent phenomenon in endurance-trained athletes? *International Journal of Sports Medicine* 13:344-347.
- White, F.C., C.M. Bloor, M.D. McKirnan, and S.M. Carroll. 1998. Exercise training in swine promotes growth of arteriolar bed and capillary angiogenesis in heart. *Journal of Applied Physiology* 85:1160-1168.
- Wilmore, J.H., P.R. Stanforth, J. Gagnon, T. Rice, S. Mandel, A.S. Leon, D.C. Rao, J.S. Skinner, and C. Bouchard. 2001. Heart rate and blood pressure changes with endurance training: The HERITAGE family study. *Medicine and Science in Sports and Exercise* 33:107-116.
- Winzer, E.B., F. Woitek, and A. Linke. 2018. Physical activity in the prevention and treatment of coronary artery disease. *Journal of the American Heart Association* 7(4):e007725.
- Wolfe, L.A., and D.A. Cunningham. 1982. Effects of chronic exercise on cardiac output and its determinants. *Canadian Journal of Physiology and Pharmacology* 60:1089-1097.
- Womack, C.J., P.R. Nagelkirk, and A.M. Coughlin. 2003. Exercise-induced changes in coagulation and fibrinolysis in healthy populations and patients with cardiovascular disease. *Sports Medicine* 33:795-807.
- Woodman, C.R., M.A. Thompson, J.R. Turk, and M.H. Laughlin. 2005. Endurance exercise training improves endothelium-dependent relaxation in brachial arteries from hypercholesterolemic male pigs. *Journal of Applied Physiology* 99:1412-1421.
- Woodman, C.R., J.R. Turk, D.P. Williams, and M.H. Laughlin. 2003. Exercise training preserves endothelium-dependent relaxation in brachial arteries from hyperlipidemic pigs. *Journal of Applied Physiology* 94:2017-2026.
- Yeboah, J., J.R. Crouse, F.C. Hsu, G.L. Burke, and D.M. Herrington. 2007. Brachial flow-mediated dilation predicts incident cardiovascular events in older adults: The Cardiovascular Health Study. *Circulation* 115(18):2390-2397.
- Zhou, B., R.K. Conlee, R. Jensen, G.W. Fellingham, J.D. George, and A.G. Fisher. 2001. Stroke volume does not plateau during graded exercise in elite male distance runners. *Medicine and Science in Sports and Exercise* 33:1849-1854.

## Chapter 11

- Ahmadizad, S., and M.S. El-Sayed. 2005. The acute effects of resistance exercise on the main determinants of blood rheology. *Journal of Sports Sciences* 23(3):243-249.
- . 2003. The effects of graded resistance exercise on platelet aggregation and activation. *Medicine and Science in Sports and Exercise* 35(6):1026-1032.
- Ahmadizad, S., M.S. El-Sayed, and D.P.M. Maclaren. 2006. Responses of platelet activation and function to a single bout of resistance exercise and recovery. *Clinical Hemorheology and Microcirculation* 35(1-2):159-168.
- Amini, A, V. Sobhani, M.T. Mohammadi, and H. Shirvani. 2017. Acute effects of aerobic, resistance and concurrent exercises, and maximal shuttle run test on coagulation and fibrinolytic activity in healthy young non-athletes *Journal of Sports Medicine and Physical Fitness* 57(5):633-642.
- Balmain, B., G.M. Stewart, A. Yamada, J. Chan, L.J. Haseler, and S. Sabapathy. 2016. The impact of an experimentally induced increase in arterial blood pressure on left ventricular twist mechanics. *Experimental Physiology* 101(1):124-134.
- Bartsch, P. 1999. Platelet activations with exercise and risk of cardiac events. *Lancet* 354:1747-1748.
- Baynard, T., H.M. Jacobs, C.M. Kessler, J.A. Kanaley, and B. Fernhall. 2007. Fibrinolytic markers and vasodilatory capacity following acute exercise among men of differing training status. *European Journal of Applied Physiology* 101(5):595-602.
- Baynard, T., W.C. Miller, and B. Fernhall. 2003. Effects of exercise on vasodilatory capacity in endurance- and resistance-trained men. *European Journal of Applied Physiology* 89(1):69-73.
- Bentes, C.M., P.B. Costa, G.R. Neto, G.V. Costa e Silva, B.F. de Salles, H.L. Miranda, and J.S. Novaes. 2015. Hypotensive effects and performance responses between different resistance training intensities and exercise orders in apparently health women. *Clinical Physiology and Functional Imaging* 35(3):185-190.
- Blazek, D., P. Stastny, A. Maszczyk, M. Krawczyk, P. Matykiewicz, M. Petr. 2019. Systematic review of intra-abdominal and intrathoracic pressures initiated by the Valsalva manoeuvre during high-intensity resistance exercises. *Biology of Sport* 36(4):373-386
- Boeno, F.P., J.B. Farinha, T.R. Ramis, R.C.O. Macedo, J. Rodrigues-Krause, J. do Nascimento Queiroz, et al. 2019. Effects of a single session of high- and moderate-intensity resistance exercise on endothelial function of middle-aged sedentary men. *Frontiers in Physiology* 10:777.
- Braith, R.W., and K.J. Stewart. 2006. Resistance exercise training: Its role in the prevention of cardiovascular disease. *Circulation* 113(22):2642-2650.
- Buchanan, C.E., A.O. Kadlec, A.Z. Hoch, D.D. Gutterman, and M.J. Durand. 2017. Hypertension during weight lifting reduces flow-mediated dilation in nonathletes. *Medicine and Science in Sports and Exercise* 49(4):669-675.
- Carpio-Rivera, E., J. Moncada-Jiménez, W. Salazar-Rojas, and A. Solera-Herrera. 2016. Acute Effects of exercise on blood pressure: A meta-analytic investigation. *Arquivos brasileiros de cardiologia* 106(5):422-433.
- Casonatto, J., K.F. Goessler, V.A. Cornelissen, J.R. Cardoso, and M.D. Polito. 2016. The blood pressure-lowering effect of a single bout of resistance exercise: A systematic review and meta-analysis of randomised controlled trials. *European Journal of Preventive Cardiology* 23(16):1700-1714.
- Chamberlain, K.G., M. Tong, and D.G. Penington. 1990. Properties of the exchangeable splenic platelets released into the circulation during exercise-induced thrombocytosis. *American Journal of Hematology* 34(3):161-168.
- Collier, S.R., M.D. Diggle, K.S. Heffernan, E.E. Kelly, M.M. Tobin, and B. Fernhall. 2010. Changes in arterial distensibility and flow-mediated dilation after acute resistance vs. aerobic exercise. *Journal of Strength and Conditioning Research* 24(10):2846-2852.
- Collins, M.A., K.J. Cureton, D.W. Hill, and C.A. Ray. 1989. Relation of plasma volume change to intensity of weight lifting. *Medicine and Science in Sports and Exercise* 21(2):178-185.
- Collins, M.A., D.W. Hill, K.J. Cureton, and J.J. DeMello. 1986. Plasma volume change during heavy-resistance weight lifting. *European Journal of Applied Physiology and Occupational Physiology* 55(1):44-48.
- Craig, S.K., W.C. Byrnes, and S.J. Fleck. 2008. Plasma volume during weight lifting. *International Journal of Sports Medicine* 29(2):89-95.
- Creighton, B.C., B.R. Kupchak, J.C. Aristizabal, S.D. Flanagan, C. Dunn-Lewis, B.M. Volk, B.A. Comstock, J.S. Volek, D.R. Hooper, T.K. Szivak, C.M. Maresh, and W.J. Kraemer. 2013. Influence of training on markers of platelet activation in response to a bout of heavy resistance exercise. *European Journal of Applied Physiology* 113(9):2203-2209.
- Davies, P.F. 1995. Flow-mediated endothelial mechanotransduction. *Physiological Reviews* 75(3):519-560.
- Davies, P.F., J.A. Spaan, and R. Krams. 2005. Shear stress biology of the endothelium. *Annals of Biomedical Engineering* 33(12):1714-1718.
- DeVan, A.E., M.M. Anton, J.N. Cook, D.B. Neidre, M.Y. Cortez-Cooper, and H. Tanaka. 2005. Acute effects of resistance exercise on arterial compliance. *Journal of Applied Physiology* 98(6):2287-2291.
- de Oliveira, G.V., E. Mendes Cordeiro, M. Volino-Souza, C. Rezende, C.A. Conte-Junior, and T. Silveira Alvares. 2020. Flow-

- mediated dilation in healthy young individuals is impaired after a single resistance exercise session. *International Journal of Environmental Research and Public Health* 17(14):5194.
- de Vos, N.J., N.A. Singh, D.A. Ross, T.M. Stavrinou, R. Orr, and M.A. Fiatarone Singh. 2008. Continuous hemodynamic response to maximal dynamic strength testing in older adults. *Archives of Physical Medicine and Rehabilitation* 89(2):343-350.
- Doonan, R.J., A. Mutter, G. Egiziano, Y.H. Gomez, and S.S. Daskalopoulou. 2013. Differences in arterial stiffness at rest and after acute exercise between young men and women. *Hypertension Research: Official Journal of the Japanese Society of Hypertension* 36(3):226-231.
- Durand, M.J., K. Dharmashankar, J.T. Bian, E. Das, M. Vidovich, D.D. Gutterman, and S.A. Phillips. 2015. Acute exertion elicits a H<sub>2</sub>O<sub>2</sub>-dependent vasodilator mechanism in the microvasculature of exercise-trained but not sedentary adults. *Hypertension* 65(1):140-145.
- El-Sayed, M.S. 1993. Fibrinolytic and hemostatic parameter response after resistance exercise. *Medicine and Science in Sports and Exercise* 25(5):597-602.
- El-Sayed, M.S., C. Sale, P.G. Jones, and M. Chester. 2000. Blood hemostasis in exercise and training. *Medicine and Science in Sports and Exercise* 32(5):918-925.
- El-Sayed, M.S., Z. El-Sayed Ali, and S. Ahmadizad. 2004. Exercise and training effects of blood haemostasis in health and disease. *Sports Medicine* 34 (3): 181-200.
- Elstad, M., I.H. N dland, K. Toska, and L. Wall e. 2009. Stroke volume decreases during mild dynamic and static exercise in supine humans. *Acta Physiologica* 195(2):289-300.
- Fahs, C.A., K.S. Heffernan, and B. Fernhall. 2009. Hemodynamic and vascular response to resistance exercise with L-arginine. *Medicine and Science in Sports and Exercise* 41(4):773-779.
- Falkel, J.E., S.J. Fleck, and T.F. Murray. 1992. Comparison of central hemodynamics between powerlifters and bodybuilders during resistance exercise. *Journal of Applied Sport Science Research* 6(1):24-35.
- Featherstone, J.F., R.G. Holly, and E.A. Amsterdam. 1993. Physiologic responses to weight lifting in coronary artery disease. *American Journal of Cardiology* 71(4):287-292.
- Ferrari, R., E.L. Cadore, B. P rico, and G.B. Kothe. 2021. Acute effects of body-weight resistance exercises on blood pressure and glycemia in middle-aged adults with hypertension. *Clinical and Experimental Hypertension* 43(1):63-68.
- Fleck, S.J., and L.S. Dean. 1987. Resistance-training experience and the pressor response during resistance exercise. *Journal of Applied Physiology* 63(1):116-120.
- Forde, C, M. Johnston, C. Haberlin, P. Breen, S. Greenan, C. Gissane, T. Comyns, V. Maher, and J. Gormley. 2020. Low dose resistance exercise: A pilot study examining effects on blood pressure and augmentation index between intensities. *High Blood Pressure & Cardiovascular Prevention* 27(1):83-91.
- Franklin, N.C., M. Ali, M. Goslawski, E. Wang, and S.A. Phillips. 2014. Reduced vasodilator function following acute resistance exercise in obese women. *Frontiers in Physiology* 5:253.
- Gaffney, F.A., G. S gaard, and B. Saltin. 1990. Cardiovascular and metabolic responses to static contraction in man. *Acta Physiologica Scandinavica* 138(3):249-258.
- Garber, C.E., B. Blissmer, M.R. Deschenes, B.A. Franklin, M.J. Lamonte, I.M. Lee, et al.; American College of Sports Medicine. 2011. American College of Sports Medicine position stand. Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: guidance for prescribing exercise. *Medicine and Science in Sports and Exercise* 2011 43(7):1334-1359.
- Garc a-Mateo, P., A. Garc a-de-Alcaraz, M.A. Rodr guez-Per z, and M. Alcaraz-Ib n ez. 2020. Effects of resistance training on arterial stiffness in healthy people: A systematic review. *Journal of Sports Science and Medicine* 19(3):444-451.
- Gonzales, F., M. Ma as, I. Seiquer, J. Quiles, F.J. Mataix, J.R. Huertas, and E. Martinez-Victoria. 1996. Blood platelet function in healthy individuals of different ages. Effects of exercise and exercise conditioning. *Journal of Sports Medicine and Physical Fitness* 36(2):112-116.
- Grigoriadis, G., A.J. Rosenberg, W.K. Lefferts, S.O. Wee, E.C. Schroeder, and T. Baynard. 2020. Similar effects of acute resistance exercise on carotid stiffness in males and females. *International Journal of Sports Medicine* 41(2):82-88.
- Haram, P.M., O.J. Kemi, and U. Wisloff. 2008. Adaptation of endothelium to exercise training: Insights from experimental studies. *Frontiers in Bioscience* 13:336-346.
- Haykowsky, M.J., R. Dressendorfer, D. Taylor, S. Mandic, and D. Hume. 2002. Resistance training and cardiac hypertrophy: Unravelling the training effect. *Sports Medicine* 32(13):837-849.
- Haykowsky, M., T. Dylan, T. Koon, A. Quinney, and H. Dennis. 2001. Left ventricular wall stress during leg-press exercise performed with a brief valsalva maneuver. *Chest* 119:150-154.
- Haykowsky, M.J., N.D. Eves, D.E.R. Warburton, and M.J. Findlay. 2003. Resistance exercise, the valsalva maneuver, and cerebrovascular transmural pressure. *Medicine and Science in Sports and Exercise* 35(1):65-68.
- Haykowsky, M.J., T.J. Samuel, M.D. Nelson, A. La Gerche. 2018. Athlete's heart: Is the Morganroth hypothesis obsolete? *Heart*,

- Lung & Circulation* 27(9):1037-1041.
- Heffernan, K.S., S.R. Collier, E.E. Kelly, S.Y. Jae, and B. Fernhall. 2007a. Arterial stiffness and baroreflex sensitivity following bouts of aerobic and resistance exercise. *International Journal of Sports Medicine* 28(3):197-203.
- Heffernan, K.S., D.G. Edwards, L. Rossow, S.Y. Jae, and B. Fernhall. 2007b. External mechanical compression reduces regional arterial stiffness. *European Journal of Applied Physiology* 101(6):735-741.
- Heffernan, K.S., S.Y. Jae, D.G. Edwards, E.E. Kelly, and B. Fernhall. 2007c. Arterial stiffness following repeated Valsalva maneuvers and resistance exercise in young men. *Applied Physiology, Nutrition, and Metabolism* 32(2):257-264.
- Heffernan, K.S., L. Rossow, S.Y. Jae, H.G. Shokunbi, E.M. Gibson, and B. Fernhall. 2006. Effect of single-leg resistance exercise on regional arterial stiffness. *European Journal of Applied Physiology* 98(2):185-190.
- Howard, J.S., C.N. McLester, T.W. Evans, J.R. McLester, and J.P. Calloway. 2018. Central hemodynamics measured during 5 repetition maximum free weight resistance exercise. *International Journal of Exercise Science* 11(2):342-354.
- Howlett, L.A., K. O'Sullivan, N. Sculthorpe, and J. Richards. 2020. The effect of varying intensities of lower limb eccentric muscle contractions on left ventricular function. *European Journal of Applied Physiology* 120(2):539-548.
- Jurva, J.W., S.A. Phillips, A.Q. Syed, A.Y. Syed, S. Pitt, A. Weaver, and D.D. Gutterman. 2006. The effect of exertional hypertension evoked by weight lifting on vascular endothelial function. *Journal of the American College of Cardiology* 48(3):588-589.
- Kalliokoski, K.K., H. Langberg, A.K. Ryberg, C. Scheede-Bergdahl, S. Doessing, A. Kjaer, M. Kjaer, and R. Boushel. 2006. Nitric oxide and prostaglandins influence local skeletal muscle blood flow during exercise in humans: Coupling between local substrate uptake and blood flow. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology* 291(3):R803-R809.
- Karampour, S., and A.A. Gaeini. 2018. Response of coagulation and anti-coagulant factors of elite athletes following acute resistance and high-intensity interval training. *Journal of Sports Medicine and Physical Fitness* 58(1-2):120-126.
- Kounoupis, A., S. Papadopoulos, N. Galanis, K. Dipla, and A. Zafeiridis. 2020. Are blood pressure and cardiovascular stress greater in isometric or in dynamic resistance exercise? *Sports (Basel, Switzerland)*. 8(4):41.
- Kraemer, R.R., J.L. Kilgore, and G.R. Kraemer. 1993. Plasma volume changes in response to resistive exercise. *Journal of Sports Medicine and Physical Fitness* 33(3):246-251.
- Kraschnewski, J.L., C.N. Sciamanna, J.M. Poger, I.S. Rovniak, E.B. Lehman, A.B. Cooper, N.H. Ballentine, and J.T. Ciccolo. 2016. Is strength training associated with mortality benefits? A 15-year cohort study of US older adults. *Preventive Medicine* 87:121-127.
- Kupchak, B.R., B. C. Creighton, J.C. Aristizabal, C. Dunn-Lewis, B.M. Volk, K.D. Ballard, B.A. Comstock, C.M. Maresh, W.J. Kraemer, and J. S. Volek. 2013. Beneficial effects of habitual resistance exercise training on coagulation and fibrinolytic responses. *Thrombosis Research* 131(6):e227-e234.
- Lamotte, M., F. Fleury, M. Pirard, A. Jamon, and P. van de Borne. 2010. Acute cardiovascular response to resistance training during cardiac rehabilitation: Effects of repetition speed and rest periods. *European Journal of Cardiovascular Prevention and Rehabilitation* 2010 17(3):329-336.
- Lefferts, W.K., J.A. Augustine, and K.S. Heffernan. 2014. Effect of acute resistance exercise on carotid artery stiffness and cerebral blood flow pulsatility. *Frontiers in Physiology* 5:101.
- Lentini, A.C., R.S. McKelvie, N. McCartney, C.W. Tomlinson, and J.D. MacDougall. 1993. Left ventricular response in healthy young men during heavy-intensity weight-lifting exercise. *Journal of Applied Physiology* 75(6):2703-2710.
- Lewis, S.F., P.G. Snell, W.F. Taylor, M. Hamra, R.M. Graham, W.A. Pettinger, and C.G. Blomqvist. 1985. Role of muscle mass and mode of contraction in circulatory responses to exercise. *Journal of Applied Physiology* 58(1):146-151.
- MacDougall, J.D., R.S. McKelvie, D.E. Moroz, D.G. Sale, N. McCartney, and F. Buick. 1992. Factors affecting blood pressure during heavy weight lifting and static contractions. *Journal of Applied Physiology* 73(4):1590-1597.
- MacDougall, J.D., D. Tuxen, D.G. Sale, J.R. Moroz, and J.R. Sutton. 1985. Arterial blood pressure response to heavy resistance exercise. *Journal of Applied Physiology* 58(3):785-790.
- McCartney, N. 1999. Acute responses to resistance training and safety. *Medicine and Science in Sports and Exercise* 31(1):31-37.
- Meyer, K., R. Hajric, S. Westbrook, S. Haag-Wildi, R. Holtkamp, D. Leyk, and K. Schnellbacher. 1999. Hemodynamic responses during leg press exercise in patients with chronic congestive heart failure. *American Journal of Cardiology* 83, (11):1537-1543.
- Miles, D.S., J.J. Owens, J.C. Golden, and R.W. Gotshall. 1987. Central and peripheral hemodynamics during maximal leg extension exercise. *European Journal of Applied Physiology and Occupational Physiology* 56(1):12-17.
- Morishima, T., J. Padilla, Y. Tsuchiya, and E. Ochi. 2020. Maintenance of endothelial function following acute resistance exercise in females is associated with a tempered blood pressure response. *Journal of Applied Physiology* 129(4):792-799.
- Morishima, T., Y. Tsuchiya, M. Iemitsu, and E. Ochi. 2018. High-intensity resistance exercise with low repetitions maintains endothelial function. *American Journal of Physiology. Heart and Circulatory Physiology* 315(3):H681-H686.

- Nagelkirk, P.R., R. Scalzo, M. Harber, and L.A. Kaminsky. 2010. The influence of acute resistance training and body composition on coagulation and fibrinolytic activity in low-risk women. *International Journal of Sports Medicine* 31(7):458-462.
- Narloch, J.A., and M.E. Brandstater. 1995. Influence of breathing technique on arterial blood pressure during heavy weight lifting. *Archives of Physical Medicine and Rehabilitation* 76(5):457-462.
- Nelson, R.R., F.L. Gobel, C.R. Jorgensen, K. Wang, Y. Wang, and H.L. Taylor. 1974. Hemodynamic predictors of myocardial oxygen consumption during static and dynamic exercise. *Circulation* 50(6):1179-1189.
- Noris, M., M. Morigi, R. Donadelli, S. Aiello, M. Foppolo, M. Todeschini, S. Orisio, G. Remuzzi, and A. Remuzzi. 1995. Nitric oxide synthesis by cultured endothelial cells is modulated by flow conditions. *Circulation Research* 76(4):536-543.
- Oliveira-Dantas, F.F., R.A.V. Browne, R.S. Oliveira, L.L.P. Cabral, L.F. de Farias Junior, and E.C. Costa. 2021. Effect of high-velocity resistance exercise on 24-h blood pressure in hypertensive older women. *International Journal of Sports Medicine* 42(1):41-47.
- O'Rourke, M.F., and M.E. Safar. 2005. Relationship between aortic stiffening and microvascular disease in brain and kidney: Cause and logic of therapy. *Hypertension* 46(1):200-204.
- Parks, J.C., E.M. Marshall, Y.L. Tai, and J.D. Kingsley. 2020. Free-weight versus weight machine resistance exercise on pulse wave reflection and aortic stiffness in resistance-trained individuals. *European Journal of Sport Science* 20(7):944-952.
- Paulo, A.C., C.L.M. Forjaz, D. Mion Jr, G.V. Silva, S. Barros, and V. Tricoli. 2020. Blood pressure increase in hypertensive individuals during resistance training protocols with equated work to rest ratio. *Frontiers in Physiology* 29;11:481.
- Phillips, S.A., E. Das, J. Wang, K. Pritchard, and D.D. Guterman. 2011. Resistance and aerobic exercise protects against acute endothelial impairment induced by a single exposure to hypertension during exertion. *Journal of Applied Physiology* 110(4):1013-1020.
- Pierce, D.R., K. Doma, H. Raiff, J. Golledge, and A.S. Leicht. 2018. Influence of exercise mode on post-exercise arterial stiffness and pressure wave measures in healthy adult males. *Frontiers in Physiology* 17;9:1468.
- Ploutz-Snyder, L.L., V.A. Convertino, and G.A. Dudley. 1995. Resistance exercise-induced fluid shifts: Change in active muscle size and plasma volume. *American Journal of Physiology* 269(3):R536-R543.
- Pstras, L., K. Thomaseth, J. Waniewski, I. Balzani, and F. Bellavere. 2016. The Valsalva manoeuvre: physiology and clinical examples. *Acta physiologica* 217(2):103-119.
- Queiroz, A.C., C.C. Rezk, L. Teixeira, T. Tinucci, D. Mion, and C.L. Forjaz. 2013. Gender influence on post-resistance exercise hypotension and hemodynamics. *International Journal of Sports Medicine* 34(11):939-944.
- Rezk, C.C., R.C. Marrache, T. Tinucci, D. Mion Jr, and C.L. Forjaz. 2006. Post-resistance exercise hypotension, hemodynamics, and heart rate variability: influence of exercise intensity. *European Journal of Applied Physiology* 98(1):105-112.
- Robinson, A.T., I.S. Fancher, A.M. Mahmoud, S.A. Phillips. 2018. Microvascular vasodilator plasticity after acute exercise. *Exercise and Sports Science Reviews* 46(1):48-55.
- Röcker, L., S. Günay, H.C. Gunga, W. Hopfenmüller, A. Ruf, H. Patscheke, and M. Möckel. 2000. Activation of blood platelets in response to maximal isometric exercise of the dominant arm. *International Journal of Sports Medicine* 21(3):191-194.
- Rosenberg, A.J., Schroeder E.C., G. Grigoriadis, S.O. Wee, K. Bunsawat, K.S. Heffernan, B. Fernhall, and T. Baynard. 2020. Aging reduces cerebral blood flow regulation following an acute hypertensive stimulus. *Journal of Applied Physiology* 128(5):1186-1195.
- Rossi, F.E., J. Gerosa-Neto, T.A. Diniz, I.F. Freitas Junior, F.S. Lira, and J.M. Cholewa. 2016. Moderate rest intervals are superior to short intervals for improving PAI-1 following exhaustive exercise in recreational weightlifters. *Journal of Exercise Rehabilitation* 12(6):559-566.
- Rossow, L., C.A. Fahs, M. Guerra, S.Y. Jae, K.S. Heffernan, and B. Fernhall. 2010. Acute effects of supramaximal exercise on carotid artery compliance and pulse pressure in young men and women. *European Journal of Applied Physiology* 110(4):729-737.
- Rowland T., and B. Fernhall. 2007. Cardiovascular responses to static exercise: A re-appraisal. *International Journal of Sports Medicine* 28(11):905-908.
- Rowland, T., K. Heffernan, S.Y. Jae, G. Echols, G. Krull, and B. Fernhall. 2006. Cardiovascular responses to static exercise in boys: insights from tissue Doppler imaging. *European Journal of Applied Physiology* 97(5):637-642.
- Sabbahi, A., R. Arena, L.A. Kaminsky, J. Myers, and S.A. Phillips. 2018. Peak blood pressure responses during maximum cardiopulmonary exercise testing: Reference standards from FRIEND (Fitness Registry and the Importance of Exercise: A National Database). *Hypertension* 71(2):229-236.
- Sabbahi, A., R. Arena, L.A. Kaminsky, J. Myers, B. Fernhall, C. Sundeeep, and S.A. Phillips. 2021. Characterization of the blood pressure response during cycle ergometer cardiopulmonary exercise testing in black and white men: Data from the Fitness Registry and Importance of Exercise: A National Database (FRIEND). *Journal of Human Hypertension* 35(8):685-695.
- Sale, D.G., D.E. Moroz, R.S. McKelvie, J.D. MacDougall, and N. McCartney. 1993. Comparison of blood pressure response to isokinetic and weight-lifting exercise. *European Journal of Applied Physiology and Occupational Physiology* 67(2):115-120.

- Samuel, T.J., R. Beaudry, M.J. Haykowsky, S. Sarma, S. Park, T. Dombrowski, P.S. Bhelle, and M.D. Nelson. 2017. Isometric handgrip echocardiography: A noninvasive stress test to assess left ventricular function. *Clinical Cardiology* 40:1247-1255.
- Schoenfeld, B.J. 2010. The mechanisms of muscle hypertrophy and their application to resistance training. *Journal of Strength and Conditioning Research* 24(10):2857-2872.
- Sharman, J.E., N.A. Smart, J.S. Coombes, and M. Stowasser. 2019. Exercise and sport science Australia position stand update on exercise and hypertension. *Journal of Human Hypertension* 33(12):837-843.
- Sjøgaard, G., and B. Saltin. 1982. Extra- and intracellular water spaces in muscles of man at rest and with dynamic exercise. *American Journal of Physiology* 243(3):R271-R280.
- Smith, J.E. 2003. Effects of strenuous exercise on haemostasis. *British Journal of Sports Medicine* 37(5):433-435.
- Stöhr, E.J., M. Stembridge, R. Shave, T.J. Samuel, K. Stone, and J.I. Esformes. 2017. Systolic and diastolic left ventricular mechanics during and after resistance exercise. *Medicine and Science in Sports and Exercise* 49(10):2025-2031.
- Thomas, K.N., L.S. Kissling, T.D. Gibbons, A.P. Akerman, A.M. van Rij, J.D. Cotter. 2020. The acute effect of resistance exercise on limb blood flow. *Experimental Physiology* 105(12):2099-2109.
- Thompson, P.D., B.A. Franklin, G.J. Balady, S.N. Blair, D. Corrado, N.A. Mark Estes 3rd, J.E. Fulton, et al. 2007. 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(17):2358-2368.
- Tomschi, F., E. Rautenberg, E. Isenmann, H. Ottmann, W. Bloch, and M. Grau. 2019. Effects of a highly intensive clean and jerk exercise on blood pressure and arterial stiffness in experienced non-professional weight lifters. *European Journal of Applied Physiology* 119(4):913-920.
- U.S. Department of Health and Human Services. *Physical Activity Guidelines for Americans*. 2nd ed. Washington, DC: U.S. Department of Health and Human Services; 2018.
- Varady, K.A., S. Bhutani, E.C. Church, and S.A. Phillips. 2010. Adipokine responses to acute resistance exercise in trained and untrained men. *Medicine and Science in Sports and Exercise* 42(3):456-462.
- Vind, J., G. Gleerup, P.T. Nielsen, and K. Winther. 1993. The impact of static work on fibrinolysis and platelet function. *Thrombosis Research* 72(5):441-446.
- Whelton PK, R.M. Carey, W.S. Aronow, D.E. Casey Jr., K.J. Collins, C.D. Himmelfarb, S.M. DePalma, et al. 2018. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation* 138(17):e426-e483.
- Williams, M.A., W.L. Haskell, P.A. Ades, E.A. Amsterdam, V. Bittner, B.A. Franklin, M. Gulanick, S.T. Laing, and K.J. Stewart. 2007. Resistance exercise in individuals with and without cardiovascular disease: 2007 update: A scientific statement from the American Heart Association Council on Clinical Cardiology and Council on Nutrition, Physical Activity, and Metabolism. *Circulation* 116(5):572-584.

## Chapter 12

- Adler, Y., E.Z. Fisman, N. Koren-Morag, D. Tanne, J. Shemesh, E. Lasry, et al. 2008. Left ventricular diastolic function in trained male weight lifters at rest and during isometric exercise. *American Journal of Cardiology* 102:97-101.
- Anton, M.M., M.Y. Cortez-Cooper, A.E. DeVan, D.B. Neidre, J.N. Cook, and H. Tanaka. 2006. Resistance training increases basal limb blood flow and vascular conductance in aging humans. *Journal of Applied Physiology* 101(5):1351-1355.
- Ashor, A.W., J. Lara, M. Siervo M, C. Celis-Morales, and J.C. Mathers. 2014. Effects of exercise modalities on arterial stiffness and wave reflection: a systematic review and meta-analysis of randomized controlled trials. *PLoS One* 9(10):e110034.
- Ashor, A.W., J. Lara, M. Siervo M, C. Celis-Morales, C. Oggioni, D.G. Jakovljevic, and J.C. Mathers. 2015. Exercise modalities and endothelial function: A systematic review and dose-response meta-analysis of randomized controlled trials. *Sports Medicine* 45(2):279-296.
- Baynard, T., W.C. Miller, and B. Fernhall. 2003. Effects of exercise on vasodilatory capacity in endurance- and resistance-trained men. *European Journal of Applied Physiology* 89(1):69-73.
- Bertovic, D.A., T.K. Waddell, C.D. Gatzka, J.D. Cameron, A.M. Dart, and B.A. Kingwell. 1999. Muscular strength training is associated with low arterial compliance and high pulse pressure. *Hypertension* 33(6):1385-1391.
- Beaumont A., F. Grace, J. Richards, J. Hough, D. Oxborough, and N. Sculthorpe. 2017. Left ventricular speckle tracking-derived cardiac strain and cardiac twist mechanics in athletes: A systematic review and meta-analysis of controlled studies. *Sports Medicine* 47(6):1145-1170.
- Boeno, F.P., T.R. Ramis, S.V. Munhoz, J.B. Farinha, C.E.J. Moritz, R. Leal-Menezes, J.L. Ribeiro, D.D. Christou, A. Reischak-Oliveira. 2020. Effect of aerobic and resistance exercise training on inflammation, endothelial function and ambulatory blood pressure in middle-aged hypertensive patients. *Journal of Hypertension* 38(12):2501-2509.
- Braith, R.W., and K.J. Stewart. 2006. Resistance exercise training: Its role in the prevention of cardiovascular disease. *Circulation* 113(22):2642-2650.
- Cahu Rodrigues, S.L., B.Q. Farah, G. Silva, M. Correia, R. Pedrosa, L. Vianna, R.M. Ritti-Dias. 2020. Vascular effects of isometric handgrip training in hypertensives. *Clinic and Experimental Hypertension* 42(1):24-30.
- Casey, D.P., D.T. Beck, and R.W. Braith. 2007. Progressive resistance training without volume increases does not alter arterial stiffness and aortic wave reflection. *Experimental Biology and Medicine* 232(9):1228-1235.
- Casey, D.P., G.L. Pierce, K.S. Howe, M.C. Mering, and R.W. Braith. 2007. Effect of resistance training on arterial wave reflection and brachial artery reactivity in normotensive postmenopausal women. *European Journal of Applied Physiology* 100(4):403-408.
- Ceciliato, J., E.C. Costa, L. Azevêdo, J.C. Sousa, R.Y. Fecchio, an L.C. Brito. 2020. Effect of resistance training on arterial stiffness in healthy subjects: A systematic review and meta-analysis. *Current Hypertension Reports* 22(8):51.
- Collier, S.R., J.A. Kanaley, R. Carhart Jr., V. Frechette, M.M. Tobin, A.K. Hall, et al. 2008. Effect of 4 weeks of aerobic or resistance exercise training on arterial stiffness, blood flow and blood pressure in pre- and stage-1 hypertensives. *Journal of Human Hypertension* 22(10):678-686.
- Cornelissen, V.A., and R.H. Fagard. 2005. Effect of resistance training on resting blood pressure: A meta-analysis of randomized controlled trials. *Journal of Hypertension* 23(2):251-259.
- Cornelissen, V.A. and N.A. Smart. 2013. Exercise training for blood pressure: a systematic review and meta-analysis. *Journal of the American Heart Association* 2(1):e004473.
- Cortez-Cooper, M.Y., A.E. DeVan, M.M. Anton, R.P. Farrar, K.A. Beckwith, J.S. Todd, and H. Tanaka. 2005. Effects of high intensity resistance training on arterial stiffness and wave reflection in women. *American Journal of Hypertension* 18(7):930-934.
- D'Andrea, A., P. Caso, B. Sarubbi, G. Limongelli, B. Liccardo, G. Cice, L. D'Andrea, M. Scherillo, M. Cotrufo, and R. Calabrò. 2003. Right ventricular myocardial adaptation to different training protocols in top-level athletes. *Echocardiography* 20(4):329-336.
- D'Andrea, A., P. Caso, R. Scarafile, G. Salerno, G. De Corato, C. Mita, et al. 2007. Biventricular myocardial adaptation to different training protocols in competitive master athletes. *International Journal of Cardiology* 115(3):342-349.
- Dawkins, T.G., B.A. Curry, A.L. Drane, R.N. Lord, C. Richards, M. Brown, et al. 2020. Stimulus-specific functional remodeling of the left ventricle in endurance and resistance-trained men. *American Journal of Physiology. Heart and Circulatory Physiology* 319(3):H632-H641.
- Dawson, E.A., B. Sheikhsaraf, M. Boidin, R.M. Erskine, and D.H.J. Thijssen. 2021. Intra-individual differences in the effect of endurance versus resistance training on vascular function: A cross-over study. *Scandinavian Journal of Medicine and Science in Sports* 31(8):1683-1692.
- El-Sayed, M.S., et al. 2005. Aggregation and activation of blood platelets in exercise and training. *Sports Medicine* 35:11-22.
- Fagard, R.H. 2006. Exercise is good for your blood pressure: Effects of endurance training and resistance training. *Clinical and Experimental Pharmacology and Physiology* 33(9):853-856.

- Fahs, C.A., K.S. Heffernan, S. Ranadive, S.Y. Jae, and B. Fernhall. 2010. Muscular strength is inversely associated with aortic stiffness in young men. *Medicine and Science in Sports and Exercise* 42(9):1619-1624.
- Fernhall, B., and S. Agiovlasis. 2008. Arterial function in youth: Window into cardiovascular risk. *Journal of Applied Physiology* 105(1):325-333.
- Fleck, S.J., and L.S. Dean. 1987. Resistance-training experience and the pressor response during resistance exercise. *Journal of Applied Physiology* 63(1):116-120.
- García-Mateo, P., A. García-de-Alcaraz, M.A. Rodríguez-Peréz, and M. Alcaraz-Ibáñez. 2020. Effects of resistance training on arterial stiffness in healthy people: A systematic review. *Journal of Sports Science and Medicine* 19(3):444-451.
- Haennel, R.G., G.D. Snydmiller, K.K. Teo, P.V. Greenwood, H.A. Quinney, and C.T. Kappagoda. 1992. Changes in blood pressure and cardiac output during maximal isokinetic exercise. *Archives of Physical Medicine and Rehabilitation* 73(2):150-155.
- Haykowsky, M.J., R. Dressendorfer, D. Taylor, S. Mandic, and D. Humen. 2002. Resistance training and cardiac hypertrophy: Unravelling the training effect. *Sports Medicine* 32(13):837-849.
- Haykowsky, M., J. McGavock, I. Vonder Muhll, et al. 2005. Effect of exercise training on peak power, left ventricular morphology, and muscle strength in healthy older women. *Journals of Gerontology: Series A, Biological Sciences and Medical Sciences* 60:307-311.
- Haykowsky, M., D. Taylor, K. Teo, A. Quinney, and D. Humen. 2001. Left ventricular wall stress during leg-press exercise performed with a brief valsalva maneuver. *Chest* 119:150-154.
- Heffernan, K.S., C.A. Fahs, G.A. Iwamoto, S.Y. Jae, K.R. Wilund, J.A. Woods, B. Fernhall. 2009. Resistance exercise training reduces central blood pressure and improves microvascular function in African-American and white men. *Atherosclerosis* 207:220-226.
- Heffernan, K.S., S. Y. Jae, G.H. Echols, N.R. Lepine, B. Fernhall. 2007. Arterial stiffness and wave reflection following exercise in resistance trained men. *Medicine and Science in Sports and Exercise* 39:842-849.
- Heffernan, K.S., S.Y. Jae, M. Lee, J.A. Woods, and B. Fernhall. 2008. Arterial wave reflection and vascular autonomic modulation in young and older men. *Aging Clinical and Experimental Research* 20(1):1-7.
- Hoffmann, F, S. Moestl, S.V. Wooten, S. Stray-Gundersen, C.R. Tomczak, J. Tank, H. Tanaka, J. Rittweger, and Chilibeck. 2021. Left ventricular dimensions and diastolic function are different in throwers, endurance athletes, and sprinters from the world masters athletics championships. *Frontiers in Physiology* 12:643764.
- Holder, S.M., E.A. Dawson, Á. Brislane, J. Hisdal, D.J. Green, and D.H.J. Thijssen. 2019. Fluctuation in shear rate, with unaltered mean shear rate, improves brachial artery flow-mediated dilation in healthy, young men. *Journal of Applied Physiology* 126(6):1687-1693.
- Kawano H, H. Tanaka, and M. Miyachi. 2006. Resistance training and arterial compliance: Keeping the benefits while minimizing the stiffening. *Journal of Hypertension* 24:1753-1759.
- Kawano, H., M. Tanimoto, K. Yamamoto, K. Sanada, Y. Gando, I. Tabata, et al. 2008. Resistance training in men is associated with increased arterial stiffness and blood pressure but does not adversely affect endothelial function as measured by arterial reactivity to the cold pressor test. *Experimental Physiology* 93(2):296-302.
- Kelley, G.A., and K.S. Kelley. 2000. Progressive resistance exercise and resting blood pressure. A meta-analysis of randomized controlled trials. *Hypertension* 35:838-843.
- Kraschnewski, J.L., C.N. Sciamanna, J.M. Poger, I.S. Rovniak, E.B. Lehman, A.B. Cooper, N.H. Ballentine, and J.T. Ciccolo. 2016. Is strength training associated with mortality benefits? A 15-year cohort study of US older adults. *Preventive Medicine* 87:121-127.
- Lane, H.A., F. Grace, J.C. Smith, K. Morris, J. Cockcroft, M.F. Scanlon, and J.S. Davies. 2006. Impaired vasoreactivity in bodybuilders using androgenic anabolic steroids. *European Journal of Clinical Investigations* 36(7):483-488.
- Lekavich, C.L., J.D. Allen, D.R. Bensimhon, L.A. Bateman, C.A. Slentz, G.P. Samsa, A.A. Kenjale, B.D. Duscha, P.S. Douglas, and W.E. Kraus. 2021. Aerobic versus resistance training effects on ventricular-arterial coupling and vascular function in the STRRIDE-AT/RT Trial. *Frontiers in Cardiovascular Medicine* 8:638929.
- Li, Y., H. Hanssen, M. Cordes, A. Rossmeissl, S. Endes, A. Schmidt-Trucksäss. 2015. Aerobic, resistance and combined exercise training on arterial stiffness in normotensive and hypertensive adults: A review. *European Journal of Sport Science* 15(5):443-457.
- Liu, Y., D.C. Lee, Y. Li, W. Zhu, R. Zhang, X. Sui, C.J. Lavie, and S.N. Blair. 2019. Associations of resistance exercise with cardiovascular disease morbidity and mortality. *Medicine and Science in Sports and Exercise* 51(3):499-508.
- Longhurst, J.C., and C.L. Stebbins. 1992. The isometric athlete. *Cardiology Clinics* 10(2):281-294.
- Lopes, S., V. Afreixo, M. Teixeira, C. Garcia, C. Leitão, M. Gouveia, D. Figueiredo, A.J. Alves, J. Polonia, J. Oliveira, J. Mesquita-Bastos, and F. Ribeiro. 2021. Exercise training reduces arterial stiffness in adults with hypertension: A systematic review and meta-analysis. *Journal of Hypertension* 39(2):214-222
- López-Valenciano, A., I. Ruiz-Pérez, F. Ayala, J. Sánchez-Meca, F.J. Vera-García. 2019. Updated systematic review and meta-

- analysis on the role of isometric resistance training for resting blood pressure management in adults. *Journal of Hypertension* 37(7):1320-1333.
- MacDonald, H.V., B.T. Johnson, T.B. Huedo-Medina, J. Livingston, K.C. Forsyth, W.J. Kraemer, P.T. Farinatti, and L.S. Pescatello. 2016. Dynamic resistance training as stand-alone antihypertensive lifestyle therapy: A meta-analysis. *Journal of the American Heart Association* 5(10):e003231.
- McCartney, N., R.S. McKelvie, J. Martin, D.G. Sale, and J.D. MacDougall. 1993. Weight training-induced attenuation of the circulatory response of older males to weight lifting. *Journal of Applied Physiology* 74(3):1056-1060.
- McGuigan, M.R., R. Bronks, R.U. Newton, M.J. Sharman, J.C. Graham, D.V. Cody, et al. 2001. Resistance training in patients with peripheral arterial disease: Effects on myosin isoforms, fiber type distribution, and capillary supply to skeletal muscle. *Journals of Gerontology: Series A, Biological Sciences and Medical Science* 56(7):B302-B310.
- Miyachi, M. 2013. Effects of resistance training on arterial stiffness: A meta-analysis. *British Journal of Sports Medicine* 47(6):393-396.
- Miyachi, M., A.J. Donato, K. Yamamoto, K. Takahashi, P.E. Gates, K.L. Moreau, et al. 2003. Greater age-related reductions in central arterial compliance in resistance-trained men. *Hypertension* 41(1):130-135.
- Miyachi, M., H. Kawano, J. Sugawara, K. Takahashi, K. Hayashi, K. Yamazaki, et al. 2004. Unfavorable effects of resistance training on central arterial compliance: A randomized intervention study. *Circulation* 110(18):2858-2863.
- Morganroth, J., B.J. Maron, W.L. Henry, and S.E. Epstein. Comparative left ventricular dimensions in trained athletes. 1975. *Annals of Internal Medicine* 82(4):521-524.
- Morra, E.A., D. Zaniqueli, S.L. Rodrigues, L.M. El-Aouar, W. Lunz, J.G. Mill, and L. Carletti. 2014. Long-term intense resistance training in men is associated with preserved cardiac structure/function, decreased aortic stiffness, and lower central augmentation pressure. *Journal of Hypertension* 32(2):286-293.
- Nagelkirk, P.R., K. Soave, C. Altherr, and A. Del Pozzi. 2021. Regular resistance training enhances fibrinolytic potential but does not affect coagulation. *Medicine and Science in Sports and Exercise* 53(11):2318-2323.
- Naylor, L.H., K. George, G. O'Driscoll, and D.J. Green. 2008. The athlete's heart: A contemporary appraisal of the "Morganroth hypothesis." *Sports Medicine* 38(1):69-90.
- Okamoto, T., M. Masuhara, and K. Ikuta. 2006. Effects of eccentric and concentric resistance training on arterial stiffness. *Journal of Human Hypertension* 20(5):348-354.
- Oliver-Martínez, P.A., D.J. Ramos-Campo, L.M. Martínez-Aranda, A. Martínez-Rodríguez, and J.Á. 2020. Chronic effects and optimal dosage of strength training on SBP and DBP: a systematic review with meta-analysis. *Hypertension* 38(10):1909-1918.
- Olson, T.P., D.R. Dengel, A.S. Leon, and K.H. Schmitz. 2006. Moderate resistance training and vascular health in overweight women. *Medicine and Science in Sports and Exercise* 38(9):1558-1564.
- Oxborough, D.L., A. Spence, K.P. George, F. Van Oorschot, D.H.T. Thijssen, and D.J. Green. 2019. Impact of 24 weeks of supervised endurance versus resistance exercise training on left ventricular mechanics in healthy untrained humans. *Journal of Applied Physiology* 126(4):1095-1102.
- Pearson, A.C., M. Schiff, D. Mrosek, A.J. Leibovitz, and G.A. Williams. 1986. Left ventricular diastolic function in weight lifters. *American Journal of Cardiology* 58:1254-1259.
- Pedralli, M.L., R.A. Marschner, D.P. Kollet, S.G. Neto, E. Eibel, H. Tanaka, and A.M. Lehen. 2020. Different exercise training modalities produce similar endothelial function improvements in individuals with prehypertension or hypertension: A randomized clinical trial Exercise, endothelium and blood pressure. *Scientific Reports* 10(1):7628.
- Pluim, B.M., A.H. Zwiderman, A. van der Laarse, and E.E. van der Wall. 2000. The athlete's heart: A meta-analysis of cardiac structure and function. *Circulation* 101:336-344.
- Rakobowchuk, M., C.L. McGowan, P.C. de Groot, D. Bruinsma, J.W. Hartman, S.M. Phillips, and M.J. MacDonald. 2005. Effect of whole body resistance training on arterial compliance in young men. *Experimental Physiology* 90(4):645-651.
- Rakobowchuk, M., C.L. McGowan, P.C. de Groot, J.W. Hartman, S.M. Phillips, and M.J. MacDonald. 2005. Endothelial function of young healthy males following whole body resistance training. *Journal of Applied Physiology* 98(6):2185-2190.
- Sale, D.G., D.E. Moroz, R.S. McKelvie, J.D. MacDougall, and N. McCartney. 1994. Effect of training on the blood pressure response to weight lifting. *Canadian Journal of Applied Physiology* 19(1):60-74.
- Scharf, M., D. Oezdemir, A. Schmid, W. Kemmler, S. von Stengel, M.S. May, M. Uder, and M.M. Lell. 2017. Myocardial adaption to HI(R)T in previously untrained men with a randomized, longitudinal cardiac MR imaging study (Physical adaptations in Untrained on Strength and Heart trial, PUSH-trial). *PLoS One* 12(12):e0189204.
- Schmidt, J.F., P.R. Hansen, T.R. Andersen, L.J. Andersen, T. Hornstrup, P. Krstrup, and J. Bangsbo. 2014. Cardiovascular adaptations to 4 and 12 months of football or strength training in 65- to 75-year-old untrained men. *Scandinavian Journal of Medicine and Science in Sports* 24 Suppl 1:86-97.
- Snoeckx, L.H., H.F. Abeling, J.A. Lambregts, J.J. Schmitz, F.T. Verstappen, and R.S. Reneman. 1982. Echocardiographic dimensions in athletes in relation to their training programs. *Medicine and Science in Sports and Exercise* 14(6):428-434.

- Spence, A.L., L.H. Naylor, H.H. Carter, C.L. Buck, L. Dembo, C.P. Murray, P. Watson, D. Oxborough, K.P. George, and D.J. Green. 2011. A prospective randomised longitudinal MRI study of left ventricular adaptation to endurance and resistance exercise training in humans. *Journal of Physiology* 589(Pt 22):5443-5452.
- Spence, A.L., L.H. Naylor, H.H. Carter, L. Dembo, C.P. Murray, G. O'Driscoll, K.P. George, and D.J. Green. 2013. Does echocardiography accurately reflect CMR-determined changes in left ventricular parameters following exercise training? A prospective longitudinal study. *Journal of Applied Physiology* 114(8):1052-1057.
- Taaffe, D.R., D.A. Galvao, J.E. Sharman, and J.S. Coombes. 2007. Reduced central blood pressure in older adults following progressive resistance training. *Journal of Human Hypertension* 21(1):96-98.
- Thompson, P.D., B.A. Franklin, G.J. Balady, S.N. Blair, D. Corrado, N.A. Estes, et al. 2007. 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(17):2358-2368.
- Utomi, V., D. Oxborough, G.P. Whyte, J. Somauroo, S. Sharma, R. Shave, G. Atkinson, and K. George. 2013. Systematic review and meta-analysis of training mode, imaging modality and body size influences on the morphology and function of the male athlete's heart. *Heart* 99(23):1727-1733.
- Vitarelli, A, L. Capotosto, G. Placanica, F. Caranci, M. Pergolini, F. Zardo, F. Martino, S. De Chiara, and M. Vitarelli. 2013. Comprehensive assessment of biventricular function and aortic stiffness in athletes with different forms of training by three-dimensional echocardiography and strain imaging. *European Heart Journal. Cardiovascular Imaging* 14(10):1010-1020.
- Waclawovsky, G., M.L. Pedralli, B. Eibel, M.I. Schaun, and A.M. Lehnen. 2021. Effects of different types of exercise training on endothelial function in prehypertensive and hypertensive individuals: A systematic review. *Arquivos brasileiros de cardiologia* 116(5):938-947.
- Yoshizawa, M., S. Maeda, A. Miyaki, M. Misono, Y. Saito, K. Tanabe, S. Kuno, and R. Ajisaka. 2008. Effect of 12 weeks of moderate intensity resistance training on arterial stiffness: A randomized controlled trial in women aged 32-59. *British Journal of Sports Medicine* 43:615-618.
- Zhang, Y., L. Qi, L. Xu, X. Sun, W. Liu, S. Zhou, F. van de Vosse, and S.E. Greenwald. 2018. Effects of exercise modalities on central hemodynamics, arterial stiffness and cardiac function in cardiovascular disease: Systematic review and meta-analysis of randomized controlled trials. *PLoS One* 13(7):e0200829