

Cell Physiology of Exercise

BIOL4026

View Online



BAAR, K. (2006). Training for Endurance and Strength. *Medicine & Science in Sports & Exercise*, 38(11), 1939–1944. <https://doi.org/10.1249/01.mss.0000233799.62153.19>

Baar, K., & Hardie, D. G. (2008). Small molecules can have big effects on endurance. *Nature Chemical Biology*, 4(10), 583–584. <https://doi.org/10.1038/nchembio1008-583>

Barrès, R., Yan, J., Egan, B., Treebak, J. T., Rasmussen, M., Fritz, T., Caidahl, K., Krook, A., O’Gorman, D. J., & Zierath, J. R. (2012). Acute Exercise Remodels Promoter Methylation in Human Skeletal Muscle. *Cell Metabolism*, 15(3), 405–411. <https://doi.org/10.1016/j.cmet.2012.01.001>

Bogdanis, G. C., Nevill, M. E., Boobis, L. H., Lakomy, H. K., & Nevill, A. M. (1995). Recovery of power output and muscle metabolites following 30 s of maximal sprint cycling in man. *The Journal of Physiology*, 482(2), 467–480. <https://doi.org/10.1113/jphysiol.1995.sp020533>

Boluyt, M. O., Brevick, J. L., Rogers, D. S., Randall, M. J., Scalia, A. F., & Li, Z. B. (2006). Changes in the rat heart proteome induced by exercise training: Increased abundance of heat shock protein hsp20. *PROTEOMICS*, 6(10), 3154–3169. <https://doi.org/10.1002/pmic.200401356>

BOOTH, F. W., TSENG, B. S., FLUCK, M., & CARSON, J. A. (1998). Molecular and cellular adaptation of muscle in response to physical training. *Acta Physiologica Scandinavica*, 162(3), 343–350. <https://doi.org/10.1046/j.1365-201X.1998.0326e.x>

Burniston, J. G. (2008). Changes in the rat skeletal muscle proteome induced by moderate-intensity endurance exercise. *Biochimica et Biophysica Acta (BBA) - Proteins and Proteomics*, 1784(7–8), 1077–1086. <https://doi.org/10.1016/j.bbapap.2008.04.007>

Burniston, J. G. (2009). Adaptation of the rat cardiac proteome in response to intensity-controlled endurance exercise. *PROTEOMICS*, 9(1), 106–115. <https://doi.org/10.1002/pmic.200800268>

Burstein, B., & Nattel, S. (2008). Atrial Fibrosis: Mechanisms and Clinical Relevance in Atrial Fibrillation. *Journal of the American College of Cardiology*, 51(8), 802–809. <https://doi.org/10.1016/j.jacc.2007.09.064>

Bye, A., Høydal, M. A., Catalucci, D., Langaas, M., Kemi, O. J., Beisvag, V., Koch, L. G., Britton, S. L., Ellingsen, Ø., & Wisløff, U. (2008). Gene expression profiling of skeletal muscle in exercise-trained and sedentary rats with inborn high and low VO. *Physiological Genomics*, 35(3), 213–221. <https://doi.org/10.1152/physiolgenomics.90282.2008>

- Bye, A., Langaas, M., Høydal, M. A., Kemi, O. J., Heinrich, G., Koch, L. G., Britton, S. L., Najjar, S. M., Ellingsen, Ø., & Wisløff, U. (2008). Aerobic capacity-dependent differences in cardiac gene expression. *Physiological Genomics*, 33(1), 100–109. <https://doi.org/10.1152/physiolgenomics.00269.2007>
- Carè, A., Catalucci, D., Felicetti, F., Bonci, D., Addario, A., Gallo, P., Bang, M.-L., Segnalini, P., Gu, Y., Dalton, N. D., Elia, L., Latronico, M. V. G., Høydal, M., Autore, C., Russo, M. A., Dorn, G. W., Ellingsen, Ø., Ruiz-Lozano, P., Peterson, K. L., ... Condorelli, G. (2007). MicroRNA-133 controls cardiac hypertrophy. *Nature Medicine*, 13(5), 613–618. <https://doi.org/10.1038/nm1582>
- Casey, A., Constantin-Teodosiu, D., Howell, S., Hultman, E., & Greenhaff, P. L. (1996). Creatine ingestion favorably affects performance and muscle metabolism during maximal exercise in humans. *American Journal of Physiology-Endocrinology and Metabolism*, 271(1), E31–E37. <https://doi.org/10.1152/ajpendo.1996.271.1.E31>
- Chien, K. R. (2007). Molecular medicine: MicroRNAs and the tell-tale heart. *Nature*, 447(7143), 389–390. <https://doi.org/10.1038/447389a>
- Creemers, E. E. J. M., Davis, J. N., Parkhurst, A. M., Leenders, P., Dowdy, K. B., Hapke, E., Huet, A. M., Escobar, P. G., Cleutjens, J. P. M., Smits, J. F. M., Daemen, M. J. A. P., Zile, M. R., & Spinale, F. G. (2003). Deficiency of TIMP-1 exacerbates LV remodeling after myocardial infarction in mice. *American Journal of Physiology-Heart and Circulatory Physiology*, 284(1), H364–H371. <https://doi.org/10.1152/ajpheart.00511.2002>
- Daniels, A., van Bilsen, M., Goldschmeding, R., van der Vusse, G. J., & van Nieuwenhoven, F. A. (2009). Connective tissue growth factor and cardiac fibrosis. *Acta Physiologica*, 195(3), 321–338. <https://doi.org/10.1111/j.1748-1716.2008.01936.x>
- Di Biase, V., & Franzini-Armstrong, C. (2005). Evolution of skeletal type e-c coupling. *The Journal of Cell Biology*, 171(4), 695–704. <https://doi.org/10.1083/jcb.200503077>
- Diffie, G. M. (2004). Adaptation of Cardiac Myocyte Contractile Properties to Exercise Training. *Exercise and Sport Sciences Reviews*, 32(3), 112–119. <https://doi.org/10.1097/00003677-200407000-00007>
- Eto, Y., Yonekura, K., Sonoda, M., Arai, N., Sata, M., Sugiura, S., Takenaka, K., Gualberto, A., Hixon, M. L., Wagner, M. W., & Aoyagi, T. (2000). Calcineurin Is Activated in Rat Hearts With Physiological Left Ventricular Hypertrophy Induced by Voluntary Exercise Training. *Circulation*, 101(18), 2134–2137. <https://doi.org/10.1161/01.CIR.101.18.2134>
- Fernandes, T., Baraúna, V. G., Negrão, C. E., Phillips, M. I., & Oliveira, E. M. (2015). Aerobic exercise training promotes physiological cardiac remodeling involving a set of microRNAs. *American Journal of Physiology-Heart and Circulatory Physiology*, 309(4), H543–H552. <https://doi.org/10.1152/ajpheart.00899.2014>
- Hambrecht, R., Adams, V., Erbs, S., Linke, A., Kra
nkel, N., Shu, Y., Baither, Y., Gielen, S., Thiele, H., Gummert, J. F., Mohr, F. W., & Schuler, G. (2003). Regular Physical Activity Improves Endothelial Function in Patients With Coronary Artery Disease by Increasing Phosphorylation of Endothelial Nitric Oxide

Synthase. *Circulation*, 107(25), 3152–3158.

<https://doi.org/10.1161/01.CIR.0000074229.93804.5C>

Haram, P. M., Adams, V., Kemi, O. J., Brubakk, A. O., Hambrecht, R., Ellingsen, Ø., & Wisløff, U. (2006). Time-course of endothelial adaptation following acute and regular exercise. *European Journal of Cardiovascular Prevention & Rehabilitation*, 13(4), 585–591. <https://doi.org/10.1097/01.hjr.0000198920.57685.76>

Haram, P. M., Kemi, O. J., & Wisloff, U. (1 C.E.). Adaptation of endothelium to exercise training: Insights from experimental studies. 13, 336–346. <https://www.bioscience.org/2008/v13/af/2683/fulltext.htm>

Hawley, J. A., Hargreaves, M., Joyner, M. J., & Zierath, J. R. (2014). Integrative Biology of Exercise. *Cell*, 159(4), 738–749. <https://doi.org/10.1016/j.cell.2014.10.029>

Hill, M., Wernig, A., & Goldspink, G. (2003). Muscle satellite (stem) cell activation during local tissue injury and repair. *Journal of Anatomy*, 203(1), 89–99. <https://doi.org/10.1046/j.1469-7580.2003.00195.x>

Hsu, C.-P., Huang, C.-Y., Wang, J.-S., Sun, P.-C., & Shih, C.-C. (2008). Extracellular Matrix Remodeling Attenuated After Experimental Postinfarct Left Ventricular Aneurysm Repair. *The Annals of Thoracic Surgery*, 86(4), 1243–1249. <https://doi.org/10.1016/j.athoracsur.2008.06.043>

Iemitsu, M., Maeda, S., Jesmin, S., Otsuki, T., Kasuya, Y., & Miyauchi, T. (2006). Activation pattern of MAPK signaling in the hearts of trained and untrained rats following a single bout of exercise. *Journal of Applied Physiology*, 101(1), 151–163. <https://doi.org/10.1152/jappphysiol.00392.2005>

Iemitsu, M., Maeda, S., Miyauchi, T., Matsuda, M., & Tanaka, H. (2005). Gene expression profiling of exercise-induced cardiac hypertrophy in rats. *Acta Physiologica Scandinavica*, 185(4), 259–270. <https://doi.org/10.1111/j.1365-201X.2005.01494.x>

Jørgensen, S. B., Richter, E. A., & Wojtaszewski, J. F. P. (2006). Role of AMPK in skeletal muscle metabolic regulation and adaptation in relation to exercise. *The Journal of Physiology*, 574(1), 17–31. <https://doi.org/10.1113/jphysiol.2006.109942>

KEMI, O., HARAM, P., LOENNECHEN, J., OSNES, J., SKOMEDAL, T., WISLOFF, U., & ELLINGSEN, O. (2005). Moderate vs. high exercise intensity: Differential effects on aerobic fitness, cardiomyocyte contractility, and endothelial function. *Cardiovascular Research*, 67(1), 161–172. <https://doi.org/10.1016/j.cardiores.2005.03.010>

KEMI, O., HOYDAL, M., HARAM, P., GARNIER, A., FORTIN, D., VENTURACLAPIER, R., & ELLINGSEN, O. (2007). Exercise training restores aerobic capacity and energy transfer systems in heart failure treated with losartan. *Cardiovascular Research*, 76(1), 91–99. <https://doi.org/10.1016/j.cardiores.2007.06.008>

Kemi, O. J., Ceci, M., Wisloff, U., Grimaldi, S., Gallo, P., Smith, G. L., Condorelli, G., & Ellingsen, O. (2008). Activation or inactivation of cardiac Akt/mTOR signaling diverges physiological from pathological hypertrophy. *Journal of Cellular Physiology*, 214(2), 316–321. <https://doi.org/10.1002/jcp.21197>

- Kemi, O. J., Ellingsen, Ø., Ceci, M., Grimaldi, S., Smith, G. L., Condorelli, G., & Wisløff, U. (2007). Aerobic interval training enhances cardiomyocyte contractility and Ca²⁺ cycling by phosphorylation of CaMKII and Thr-17 of phospholamban. *Journal of Molecular and Cellular Cardiology*, 43(3), 354–361. <https://doi.org/10.1016/j.yjmcc.2007.06.013>
- Kemi, O. J., Haram, P. M., Wisløff, U., & Ellingsen, Ø. (2004). Aerobic Fitness Is Associated With Cardiomyocyte Contractile Capacity and Endothelial Function in Exercise Training and Detraining. *Circulation*, 109(23), 2897–2904. <https://doi.org/10.1161/01.CIR.0000129308.04757.72>
- Kemi, O. J., & Wisløff, U. (2010). Mechanisms of exercise-induced improvements in the contractile apparatus of the mammalian myocardium. *Acta Physiologica*, 199(4), 425–439. <https://doi.org/10.1111/j.1748-1716.2010.02132.x>
- Kiens, B., & Richter, E. A. (1998). Utilization of skeletal muscle triacylglycerol during postexercise recovery in humans. *American Journal of Physiology-Endocrinology and Metabolism*, 275(2), E332–E337. <https://doi.org/10.1152/ajpendo.1998.275.2.E332>
- Kong, S. W., Bodyak, N., Yue, P., Liu, Z., Brown, J., Izumo, S., & Kang, P. M. (2005). Genetic expression profiles during physiological and pathological cardiac hypertrophy and heart failure in rats. *Physiological Genomics*, 21(1), 34–42. <https://doi.org/10.1152/physiolgenomics.00226.2004>
- KOVANEN, V., SUOMINEN, H., & HEIKKINEN, E. (1980). Connective tissue of "fast" and "slow" skeletal muscle in rats...effects of endurance training. *Acta Physiologica Scandinavica*, 108(2), 173–180. <https://doi.org/10.1111/j.1748-1716.1980.tb06515.x>
- Linke, A., Erbs, S., & Hambrecht, R. (1 C.E.). Effects of exercise training upon endothelial function in patients with cardiovascular disease. 13, 424–432. <https://www.bioscience.org/2008/v13/af/2689/fulltext.htm>
- Lundby, C., Montero, D., & Joyner, M. (2017). Biology of VO₂ max: looking under the physiology lamp. *Acta Physiologica*, 220(2), 218–228. <https://doi.org/10.1111/apha.12827>
- Maillet, M., van Berlo, J. H., & Molkentin, J. D. (2013). Molecular basis of physiological heart growth: fundamental concepts and new players. *Nature Reviews Molecular Cell Biology*, 14(1), 38–48. <https://doi.org/10.1038/nrm3495>
- Meeusen, R., Piacentini, M. F., Busschaert, B., Buyse, L., De Schutter, G., & Stray-Gundersen, J. (2004). Hormonal responses in athletes: the use of a two bout exercise protocol to detect subtle differences in (over)training status. *European Journal of Applied Physiology*, 91(2–3), 140–146. <https://doi.org/10.1007/s00421-003-0940-1>
- Miyachi, M., Iemitsu, M., Okutsu, M., & Onodera, S. (1998). Effects of endurance training on the size and blood flow of the arterial conductance vessels in humans. *Acta Physiologica Scandinavica*, 163(1), 13–16. <https://doi.org/10.1046/j.1365-201x.1998.0337f.x>
- MURPHY, G., & NAGASE, H. (2008). Progress in matrix metalloproteinase research. *Molecular Aspects of Medicine*, 29(5), 290–308. <https://doi.org/10.1016/j.mam.2008.05.002>

- Ramey, D. W. (1999). How to Read a Scientific Paper (Vol. 45, pp. 280–284). AAEP PROCEEDINGS.
<https://pdfs.semanticscholar.org/104b/3127547393d6b94a8641100e9c297d653f56.pdf>
- Reid, M. B. (2005). Response of the ubiquitin-proteasome pathway to changes in muscle activity. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*, 288(6), R1423–R1431. <https://doi.org/10.1152/ajpregu.00545.2004>
- Rowe, G. C., Safdar, A., & Arany, Z. (2014). Running Forward. *Circulation*, 129(7), 798–810. <https://doi.org/10.1161/CIRCULATIONAHA.113.001590>
- Spence, A. L., Carter, H. H., Naylor, L. H., & Green, D. J. (2013). A prospective randomized longitudinal study involving 6 months of endurance or resistance exercise. Conduit artery adaptation in humans. *The Journal of Physiology*, 591(5), 1265–1275. <https://doi.org/10.1113/jphysiol.2012.247387>
- Tsintzas, O. K., Williams, C., Boobis, L., & Greenhaff, P. (1996). Carbohydrate ingestion and single muscle fiber glycogen metabolism during prolonged running in men. *Journal of Applied Physiology*, 81(2), 801–809. <https://doi.org/10.1152/jappl.1996.81.2.801>
- Walter, G., Vandenborne, K., McCully, K. K., & Leigh, J. S. (1997). Noninvasive measurement of phosphocreatine recovery kinetics in single human muscles. *American Journal of Physiology-Cell Physiology*, 272(2), C525–C534. <https://doi.org/10.1152/ajpcell.1997.272.2.C525>
- Wilkins, B. J., Dai, Y.-S., Bueno, O. F., Parsons, S. A., Xu, J., Plank, D. M., Jones, F., Kimball, T. R., & Molkentin, J. D. (2004). Calcineurin/NFAT Coupling Participates in Pathological, but not Physiological, Cardiac Hypertrophy. *Circulation Research*, 94(1), 110–118. <https://doi.org/10.1161/01.RES.0000109415.17511.18>
- Williams, P. E., & Goldspink, G. (n.d.). Connective tissue changes in immobilised muscle. 138(2), 343–350. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1164074/>
- Wisløff, U. (2002). Aerobic exercise reduces cardiomyocyte hypertrophy and increases contractility, Ca²⁺ sensitivity and SERCA-2 in rat after myocardial infarction. *Cardiovascular Research*, 54(1), 162–174. [https://doi.org/10.1016/S0008-6363\(01\)00565-X](https://doi.org/10.1016/S0008-6363(01)00565-X)
- Wisløff, U., Støylen, A., Loennechen, J. P., Bruvold, M., Rognum, Ø., Haram, P. M., Tjønnå, A. E., Helgerud, J., Slørdahl, S. A., Lee, S. J., Videm, V., Bye, A., Smith, G. L., Najjar, S. M., Ellingsen, Ø., & Skjærpe, T. (2007). Superior Cardiovascular Effect of Aerobic Interval Training Versus Moderate Continuous Training in Heart Failure Patients. *Circulation*, 115(24), 3086–3094. <https://doi.org/10.1161/CIRCULATIONAHA.106.675041>