

CURRICULUM VITAE

Nisha Charkoudian, Ph.D.

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ACADEMIC AND PROFESSIONAL APPOINTMENTS

2022 Chief, Thermal & Mountain Medicine Division
U.S. Army Research Institute of Environmental Medicine, Natick, MA

2019-2021 Deputy Chief, Thermal & Mountain Medicine Division
U.S. Army Research Institute of Environmental Medicine, Natick, MA

2011 Research Physiologist, Thermal & Mountain Medicine Division
U.S. Army Research Institute of Environmental Medicine, Natick, MA

2008-2011 Associate Professor of Physiology
Department of Physiology & Biomedical Engineering
Mayo Clinic, Rochester, MN

2002– 2007 Assistant Professor of Physiology
Department of Physiology & Biomedical Engineering
Mayo Clinic, Rochester, MN

EDUCATION AND RESEARCH TRAINING

2000 – 2002 Post-doctoral Research Fellow
Human Integrative Physiology
Mayo Clinic, Rochester, MN

1999 – 2000 Post-doctoral Research Fellow
Faculté de Médecine, Université d'Angers, Angers, France

1999 Doctor of Philosophy in Physiology
University of Texas Health Science Center at San Antonio

1994-1995 Student Intern / Study Assistant
U.S. Army Research Institute of Environmental Medicine
Natick, MA

1994 Bachelor of Science, Magna Cum Laude
Springfield College, Springfield, MA

1989 - 1991 Wesleyan University, Middletown, CT

PROFESSIONAL ACTIVITIES

- Editorial Boards: *Journal of Applied Physiology*, 2002 – present; *Medicine and Science in Sports and Exercise*, 2005 – 2013 (Associate Editor, 2013-2019); *Clinical Autonomic Research*, 2008 – present; *Journal of Physiology (London)*, 2009 – 2015 (Reviewing Editor); *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*, 2011 – present; *American Journal of Physiology: Heart and Circulatory Physiology*, 2014 – 2016, 2020 - present; Consulting Editor, 2016 – 2018 & 2020 - present; Associate Editor, 2018 – 2020; *Autonomic Neuroscience: Basic & Clinical*, 2018 – present; Associate Editor, 2020 - present; *Temperature*, Guest Editor, 2020-2022.
- Grant Reviews: Mail reviewer, Musculoskeletal Rehabilitation Sciences Study Section, NIH (2010); Ad-hoc member, Arthritis, Connective Tissue and Skin Study Section, NIH (2007); Mail reviewer, Arthritis, Connective Tissue and Skin Study Section, NIH (2006)
- Ad-hoc reviewer: *PNAS*; *PLoS One*; *Hypertension*; *Circulation*; *Exercise and Sports Science Reviews*; *American Journal of Physiology: Endocrinology and Metabolism*; *Journal of Neurophysiology*; *Acta Physiologica*; *Journal of Cardiovascular Pharmacology*; *Journal of Vascular Research*; *Microcirculation*; *Journal of the American College of Nutrition*; *Military Medicine*; *Journal of the American Heart Association (JAHA)*.
- National Committees: Board of Directors, American Autonomic Society (2008-2012)
Thermal Councilor, Exercise and Environmental Physiology Steering Committee, American Physiological Society (2008-2010)
Councilor, American Physiological Society Council (2022-2025)
- Local Committees: Mayo CTSA Predoctoral Education Committee (2008-2011)
Mayo CTSA Postdoctoral Education Committee (2008-2011)
Mayo Physiology & BME Curriculum Committee (2006-2011)
USARIEM Institutional Review Board (2015 – 2017)
USAMRDC Institutional Review Board (2017 – present)

PROFESSIONAL SOCIETIES

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|------------|--------|---------------------------------------|
| 1995 – | Member | American Physiological Society |
| 1994 – | Member | American College of Sports Medicine |
| 2010 | Fellow | American College of Sports Medicine |
| 2003 – | Member | American Autonomic Society |
| 2008 -2010 | Member | Société Française de Microcirculation |
| 2009 - | Member | The Physiological Society (UK) |

INVITED LECTURES

- September 2023 “Integrative physiological responses to exercise-heat stress: sex as a biological variable” Inside Scientific Webinar, sponsored by American Physiological Society
- July 2023 “Autonomic control of body temperature and blood pressure in women: overlap of integrative mechanisms”; UK Physiological Society Annual Meeting, Harrogate, United Kingdom
- April 2023 “Sex differences in the physiology of exercise-heat stress: mechanisms and practical applications”; University at Buffalo Dept. of Exercise & Nutrition Sciences, Buffalo, NY
- March 2023 “Sex differences in the physiology of exercise-heat stress: mechanisms and practical applications”; McGill University Minds in Motion Conference, Montreal, Canada
- September 2022 “Human performance augmentation for the military: “skin-in”, “skin-out” and magnitude considerations” (joint presentation with Dr. Ben Ryan)
ACSM Integrative Physiology of Exercise Meeting, Baltimore MD
- September 2022 “Are there sex differences in exertional heat stroke among military service members?” and “Beating the heat: military training in the era of global warming” (joint presentation with Dr. Daniel Moran)
Shoresh Meeting, Rockville MD
- April 2022 “Cardiovascular responses to exercise, heat and high altitude: implications for military medicine” University of Missouri Physiology seminar (zoom)
- April 2022 “Exercise thermoregulation in men and women: sex as a biological variable”
Biomedical Basis of Elite Performance, University of Nottingham, UK
- October 2021 “Thermoregulatory responses to heat stress at rest and during exercise”
University of Wisconsin (zoom)
- September 2021 “Sex differences in responses to heat stress: mechanisms and practical applications”
Florida State University (zoom)
- June 2021 “Larry Rowell: A Tradition of Mentorship”
American Physiological Society, Exercise & Environmental Physiology Section
Webinar (zoom): A Tribute to Loring Rowell
- February 2021 “Sympathetic control of body temperature and blood pressure: responses to heat, cold and high altitude” (zoom)
American College of Sports Medicine, Texas Chapter, Raven Lecture
- November 2020 “Autonomic control of cardiovascular function in Black and White women and men: the little we know and ideas for the road ahead” (zoom)
University of Oregon Human Physiology Seminar Series

- October 2020 "Sex differences in thermoregulation: implications for physical performance" (zoom)
New England Chapter Meeting, American College of Sports Medicine
- April 2019 "Altitude research: recent approaches" Shoresh Meeting, Tel Aviv, Israel
- April 2018 "Sex differences in sympathetic control of vascular tone: influences of aging."
Experimental Biology symposium, San Diego, CA
- April 2018 "Autonomic mechanisms of thermoregulation in humans: influences of sex and age"
University of Connecticut, Storrs, CT
- March 2018 "Sympathetic neural control of the circulation: influences of environment and
hydration"
University of Massachusetts-Boston, Boston, MA
- April 2017 "Sympathetic neural control of blood pressure in women: influences of aging"
Experimental Biology symposium, Chicago, IL
- November 2016 "Influences of female reproductive hormones on autonomic regulation of body
temperature and blood pressure in humans" Invited Plenary Lecture, American
Autonomic Society Annual Meeting, San Diego, CA
- October 2015 "Sympathetic neural control of the circulation in humans: mechanisms and
measurement"
American College of Sports Medicine New England Chapter Meeting, Providence, RI
- January 2015 "Sympathetic neural control of cardiovascular function: influences of sex and aging"
University of British Columbia – Okanagan, Kelowna, BC, Canada
- November 2011 "Cardiovascular responses to exercise: mechanisms and measurement"
American College of Sports Medicine New England Chapter Fall Meeting,
Providence RI
- August 2010 "Reflex control of skin blood flow during body heating and cooling in type 2 diabetes"
U.S. Army Research Institute of Environmental Medicine, Natick, MA
- November 2009 "The sympathetic nervous system in dehydration: balancing blood pressure and blood
flow"; American College of Sports Medicine New England Chapter Fall Meeting,
Providence RI
- February 2009 "Exercise physiology, muscle blood flow, and thermoregulation"
University of Puerto Rico Physical Therapy Program, San Juan, Puerto Rico
- October 2008 "Influences of anaesthesia on sympathetic neural control of the circulation in humans"
National Anaesthesia Research Trust Meeting, Stratford-upon-Avon, United
Kingdom

- November 2007 "Inter-individual variability in blood pressure regulation: mechanisms and implications" University of Minnesota, Minneapolis, MN
- October 2007 "Inter-individual variations in hemodynamic control: keys to understanding normo-, hypo-, and hypertension" Integrative Physiology in Cardiovascular Medicine Symposium, Amsterdam Medical Center, Amsterdam, Netherlands
- September 2007 "Particularités de la microcirculation chez la femme" (French). Société Française de la Médecine Vasculaire, Brest, Bretagne, France.
- September 2007 "Skin blood flow and thermoregulation in type 2 diabetes mellitus" U.S. Army Research Institute of Environmental Medicine, Natick, MA
- May 2007, 2008 "Venous occlusion plethysmography: general concepts and applications" Integrative Human Cardiovascular Control PhD Course, Danish Cardiovascular Research Academy, University of Copenhagen, Denmark.
- March 2007 "Thermoregulation in women athletes during exercise: physiological mechanisms" 21st Annual Conference on Exercise Sciences & Sports Medicine, University of Puerto Rico, San Juan, Puerto Rico.
- March 2007 "Balance of sympathetic neural and hemodynamic factors in human blood pressure regulation". Texas Chapter, American College of Sports Medicine, Alumni Award Lecture, Forth Worth, TX.
- October 2006 "Balance between cardiac output and sympathetic nerve activity in human blood pressure regulation" Cardiovascular & Thoracic Anesthesiology Division Conference Mayo Clinic, Rochester, MN
- April 2006 "Thermoregulatory control of skin blood flow in type 2 diabetes" Université d'Angers, Angers, France
- January 2006 "Skin blood flow and thermoregulation in type 2 diabetes mellitus" Columbia University, New York, NY
- January 2006 "Inter-individual variability in sympathetic nerve activity: relationship to blood pressure regulation in humans" Penn State University, University Park, PA
- September 2005 "Influences of gender and anesthesia on baroreflex control of the heart in humans" International Symposium on Cardiac Anesthesia, Sendai, Japan
- May 2005 "Thermoregulatory control of skin blood flow in type 2 diabetes mellitus" Yale University, New Haven, CT
- February 2005 "Sympathetic nerve activity: relationship to blood pressure, cardiac output, and systemic nitric oxide in humans"

Institute of Clinical Neurosciences, Göteborg University, Göteborg, Sweden

- June 2004 "Systemic influences on vascular control mechanisms in the human peripheral circulation" U.S. Army Research Institute of Environmental Medicine, Natick, MA
- May 2004 "Interactions among reflex and local control mechanisms in the human peripheral circulation" John B. Pierce Laboratory, Yale University, New Haven, CT
- October 2003 "Reflex and local control of blood flow and blood pressure in the human circulation" Dalton Cardiovascular Research Center, University of Missouri, Columbia, MO
- June 2002 "Effects of chronic sympathectomy on vascular endothelial function in humans" Department of Physiology and Biomedical Engineering, Mayo Clinic, Rochester, MN
- April 2001 "Reflex and local modification of cutaneous vascular control in humans" Department of Exercise Science, University of Iowa, Iowa City, Iowa

TEACHING

- 2008 – 2011 Course Co-Director, CTSA Grand Rounds, Mayo Clinic, Rochester, MN
- 2004- 2011 Course Director, Integrative Cardiopulmonary Physiology Course (CORE 6700) Mayo Graduate School, Rochester, MN
- 2004 - 2011 Course Director, GCRC/CRU Human Studies Methodologies Clinical Research Training Program, Mayo Graduate School of Medicine
- 2003 – 2004 Course Co-Director, Physiological Control Systems Course Mayo Graduate School, Rochester, MN
- 2003 – 2004 Co-Director, Integrative Cardiopulmonary Physiology Course Mayo Graduate School, Rochester, MN
- Spring 2001, 2002 Lecturer, Integrative Physiology Course Mayo Graduate School, Rochester, MN
- Spring 2001 Lecture, Advanced Cardiovascular Physiology Course Department of Exercise Science, University of Iowa
- Spring 2000 Medical School Physiology Laboratory Course, "Travaux Pratiques" University of Angers, Angers, France
- Fall 1999 Second Year Medical School Physiology Course University of Angers, Angers, France
Lecture (French): "La Thermorégulation et le Contrôle de la Circulation Cutanée"

LANGUAGES English, French, Spanish, Armenian

PEER-REVIEWED PUBLICATIONS

1. Leahy MG, Kipp S, Benbaruj JM, **Charkoudian N**, Foster GE, Koehle MS, Sheel AW. Effects of sex and aging on the human respiratory muscle metaboreflex. *J Physiol* 601: 689-702, 2023.
2. Giersch GEW, Taylor KM, Caldwell AR, **Charkoudian N**. Body mass index, but not sex, influences exertional heat stroke risk in young healthy men and women. *Am J Physiol Regul Integr Comp Physiol* 324: R15-R19, 2023.
3. Saillant MM, **Charkoudian N**, Salgado RM. Individual variability in achievement of short-term heat acclimation during a fixed intensity protocol. *J Therm Biol* in press, 2023.
4. Ryan BJ, Seeley A, Pitsas D, Mayer T, Caldwell AR, Ceaser T, Luippold AJ, **Charkoudian N**, Salgado R. Influence of graded hypercapnia on endurance exercise performance in healthy humans. *Am J Physiol Reg Compr Integr Physiol* 323: R638-R647, 2022.
5. Caldwell AR, Saillant MM, Pitsas D, Johnson A, Bradbury KE, **Charkoudian N**. The effectiveness of a standardized ice-sheet cooling method following exertional hyperthermia. *Mil Med* 187: e1017-1023, 2022.
6. Ryan BJ, **Charkoudian N**, McClung JP. Consider iron status when making sex comparisons in human physiology. *J Appl Physiol* 132: 699-702, 2022.
7. Giersch GEW, **Charkoudian N**, Morrissey MC, Butler CR, Colburn AT, Caldwell AR, Kavouras SA, Casa DJ. Estrogen to progesterone ratio and fluid regulatory responses to varying degrees and methods of dehydration. *Front Sports Act Living* 3: 722305, 2021.
8. Seeley AD, Giersch GEW, **Charkoudian N**. Post-exercise body cooling: skin blood flow, venous pooling and orthostatic intolerance. *Front Sports Act Living* 3: 658410, 2021.
9. Giersch GEW, Morrissey MC, Butler CR, Colburn AT, Demarais ZS, Kavouras SA, Jay O, **Charkoudian N**, Casa DJ. Sex difference in initial thermoregulatory response to dehydrated exercise in the heat. *Physiol Rep* 9: e1497, 2021.
10. Giersch, GEW, Colburn AT, Morrissey MC, Butler CR, Pruchnicki ML, Kavouras SA, **Charkoudian N**, Casa DJ. Effects of sex and menstrual cycle on volume regulatory responses to 24-h fluid restriction. *Am J Physiol Regul Integr Comp Physiol* 319: R560-R565, 2020.
11. Toussaint CM, Kenefick RW, Petrassi FA, Muza SR, **Charkoudian N**. Altitude, Acute Mountain Sickness, and Acetazolamide: Recommendations for Rapid Ascent. *High Alt Med Biol* 22: 5-13, 2021.
12. Mitchell KA, Salgado RM, Bradbury KE, **Charkoudian N**, Kenefick RW, Chevront SN. Heat acclimation improves heat tolerance test specificity in a criteria-dependent manner. *Med Sci Sports Exerc* 53: 1050-1055, 2021.

13. Salgado RM, Coffman KE, Bradbury KE, Mitchell KM, Yurkevicius BR, Luippold AJ, Mayer TA, **Charkoudian N**, Alba BK, Fulco CS, Kenefick RW. Effect of 8 days of exercise-heat acclimation on aerobic exercise performance of men in hypobaric hypoxia. *Am J Physiol Regul Integr Comp Physiol*, 319: R114-R122, 2020.
14. Yurkevicius BR, Bradbury KE, Nixon AC, Mitchell KM, Luippold AJ, Mayer TA, Alba BK, Salgado RM, **Charkoudian N**. Influence of acetazolamide on hand strength and manual dexterity during a 30-h simulated high altitude exposure. *Military Medicine* 185: e1161-e1167, 2020.
15. Bradbury KE, Yurkevicius BR, Mitchell KM, Coffman KE, Salgado RM, Fulco CS, Kenefick RW, **Charkoudian N**. Acetazolamide does not alter endurance exercise performance at 3500 m altitude. *Journal of Applied Physiology* 128: 390-396, 2020.
16. Giersch GEW, **Charkoudian N**, Stearns RL, Casa DJ. Fluid balance and hydration considerations for women: review and future directions. *Sports Medicine* 50: 253-261, 2020.
17. **Charkoudian N**, Mitchell KM, Yurkevicius BR, Luippold AJ, Bradbury KE, Kenefick RW. Influences of hypobaric hypoxia on skin blood flow and sweating responses during exercise in neutral and hot environments. *Am J Physiol: Regulatory Integrative Comp Physiol* 317: R571 – R575, 2019.
18. Luippold AJ, **Charkoudian N**, Kenefick RW, Montain SJ, Lee JKW, Teo YS, Chevront SN. Update: efficacy of military fluid intake guidance. *Military Medicine* 183: e338-e342, 2019.
19. Chevront SN, Kenefick RW, **Charkoudian N**, Mitchell KM, Luippold AJ, Bradbury KE, Vidyasagar S. Efficacy of glucose or amino acid-based commercial beverages in meeting oral rehydration therapy goals after acute hypertonic or isotonic dehydration. *Journal of Parenteral and Enteral Nutrition* 42: 1185-1193, 2018.
20. Reyes LM, Usselman CW, Skow RJ, **Charkoudian N**, Staab JS, Davenport M, Steinback CD. Sympathetic neurovascular regulation during pregnancy: a longitudinal case series study. *Experimental Physiology* 103: 318-323, 2018.
21. Limberg J, Guo W, Joyner MJ, **Charkoudian N**, Curry TB. Early blood pressure response to isometric exercise is attenuated in obese individuals who have undergone bariatric surgery. *Journal of Applied Physiology* 124: 960-969, 2018.
22. Mitchell KM, Bradbury KE, Posch AM, Beidleman BA, Fulco CS, Muza SR, **Charkoudian N**. Influence of recent altitude exposure on sea level sympathetic neural and hemodynamic responses to orthostasis. *Autonomic Neuroscience* 210: 18-23, 2018.
23. Limberg JK, Malterer KR, Matzek LJ, Levine JA, **Charkoudian N**, Miles JM, Joyner MJ, Curry TB. Resting sympathetic activity is associated with the sympathetically mediated component of energy expenditure following a meal. *Physiological Reports* 5 (16), 2018.
24. Kenefick RW, Heavens KR, Luippold AJ, **Charkoudian N**, Schwartz SA, Chevront SN. Impact of physical load on aerobic exercise performance during heat stress. *Medicine & Science in Sports & Exercise* 49: 2570-2577, 2017.

25. Posch AM, Luippold AJ, Mitchell KM, Bradbury KE, Kenefick RW, Cheuvront SN, **Charkoudian N**. Sympathetic neural and hemodynamic responses to head-up tilt during iso-osmotic and hyper-osmotic hypovolemia. *Journal of Neurophysiology* 118: 2232-2237, 2017.
26. **Charkoudian N**, Usselman CW, Skow RJ, Staab JS, Julian CG, Stickland MK, Chari RS, Khurana R, Davidge ST, Davenport MH, Steinback CD. Muscle sympathetic nerve activity and volume regulating factors in healthy pregnant and non-pregnant women. *American Journal of Physiology: Heart and Circulation* 313: H782-H787, 2017.
27. Peinado AB, Harvey RE, Hart EC, **Charkoudian N**, Curry TB, Nickolson WT, Wallin BG, Joyner MJ, Barnes JN. Neural control of blood pressure in women: differences according to age. *Clinical Autonomic Research* 27: 157-165, 2017.
28. Al-Khateeb AA, Limberg JK, Barnes JN, Joyner MJ, **Charkoudian N**, Curry TB. Acute cyclooxygenase inhibition and baroreflex sensitivity in lean and obese adults. *Clinical Autonomic Research* 27: 17-23, 2017.
29. Briant LJB, Burchell AE, Ratcliffe LE, **Charkoudian N**, Nightingale AK, Paton JFR, Joyner MJ, Hart EC. Quantifying sympathetic neuro-haemodynamic transduction at rest in humans: insights into sex, ageing and blood pressure. *Journal of Physiology* 594: 4753-4768, 2016.
30. Heavens KR, **Charkoudian N**, O'Brien C, Kenefick RW, Cheuvront SN. Noninvasive assessment of extracellular and intracellular dehydration in healthy humans using the RXc-score graph method. *American Journal of Clinical Nutrition* 103: 724-729, 2016.
31. **Charkoudian N**, Kenefick RW, Lapadula AJ, Swiston AJ, Patel T, Blanchard LA, Caruso EM, Luippold AJ and Cheuvront SN. Planning military drinking water needs: development of a user-friendly smart device application. *Military Medicine* 181: 1142-1150, 2016.
32. Quinn CM, Audet GN, **Charkoudian N**, Leon LR. Cardiovascular and thermoregulatory dysregulation over 24 hours following acute heat stress in rats. *American Journal of Physiology: Heart Circ*, 309: H557-H564, 2015.
33. Harvey RE, Hart EC, **Charkoudian N**, Curry TB, Carter JR, Fu Q, Minson CT, Joyner MJ, Barnes JN. Oral contraceptive use, muscle sympathetic nerve activity, and systemic hemodynamics in young women. *Hypertension* 66: 590-597, 2015.
34. Kenefick RW, Heavens KR, Dennis WE, Caruso EM, Guerriere KI, **Charkoudian N** and Cheuvront SN. Quantification of chromatographic effects of vitamin B supplementation in urine and implications for hydration assessment. *Journal of Applied Physiology* 119: 110-115, 2015.
35. Quinn CM, Duran R, Audet G, **Charkoudian N**, Leon LR. Cardiovascular and thermoregulatory biomarkers of heat stroke severity in a conscious rat model. *Journal of Applied Physiology* 117: 971-978, 2014.

36. Kenefick RW, Sollanek K, **Charkoudian N**, Sawka MN. Impact of skin temperature and hydration on plasma volume responses during exercise. *Journal of Applied Physiology* 117: 413-420, 2014.
37. Barnes JN, **Charkoudian N**, Matzek LJ, Johnson CP, Joyner MJ and Curry TB. Acute cyclooxygenase inhibition does not alter muscle sympathetic nerve activity or forearm vasodilator responsiveness in lean and obese adults. *Physiological Reports* 2(7), 2014.
38. Harvey R, Barnes J, **Charkoudian N**, Curry TB, Eisenach JH, Hart EC and Joyner MJ. Forearm vasodilator responses to a β -adrenergic receptor agonist in premenopausal and postmenopausal women. *Physiological Reports* 2(6), 2014.
39. Curry TB, Hines CN, Barnes JN, Somaraju M, Basu R, Miles JM, Joyner MJ and **Charkoudian N**. Relationship of muscle sympathetic nerve activity to insulin sensitivity. *Clinical Autonomic Research*, 24: 77-85, 2014.
40. Hart EC, Wallin BG, Barnes JN, Joyner MJ and **Charkoudian N**. Sympathetic nerve activity and peripheral vasodilator capacity in young and older men. *American Journal of Physiology (Heart Circ)* 306: H904-H909, 2014.
41. Barnes JN, Hart EC, Curry TB, Nicholson WT, Eisenach JH, Wallin BG, **Charkoudian N**, and Joyner MJ. Aging enhances autonomic support of blood pressure in women. *Hypertension* 63: 303-308, 2014.
42. Cheuvront SN, Kenefick RW, **Charkoudian N** and Sawka MN. Physiologic basis for understanding quantitative dehydration assessment. *American Journal of Clinical Nutrition* 97: 455-462, 2013.
43. Hart EC, **Charkoudian N**, Joyner MJ, Barnes JN, Curry TB and Casey DP. Relationship between sympathetic nerve activity and aortic wave reflection characteristics in postmenopausal women. *Menopause* 20: 967-972, 2013.
44. Casey DP, Curry TB, **Charkoudian N**, Joyner MJ and Hart EC. The effects of acute β -adrenergic blockade on aortic wave reflection in postmenopausal women. *American Journal of Hypertension* 26: 503-510, 2013.
45. Curry TB, Somaraju M, Hines CN, Groenewald CB, Miles JM, Joyner MJ, and **Charkoudian N**. Sympathetic support of energy expenditure and sympathetic nervous system activity after gastric bypass surgery. *Obesity* 21: 480-485, 2013.
46. Farr JN, **Charkoudian N**, Barnes JN, Monroe DG, McCreedy LK, Atkinson EJ, Amin S, Melton LJ III, Joyner MJ and Khosla S. Relationship of sympathetic activity to bone microstructure, turnover, and plasma osteopontin levels in women. *Journal of Clinical Endocrinology and Metabolism* 97: 4219-4227, 2012.
47. Barnes JN, Matzek LJ, **Charkoudian N**, Joyner MJ, Curry TB and Hart EC. Association of cardiac baroreflex sensitivity with blood pressure transients: influence of sex and menopausal status. *Frontiers in Integrative Physiology* 3: 187, 2012.

48. Cheuvront SN, Ely BR, Kenefick RW, Buller MJ, **Charkoudian N** and Sawka MN. Hydration assessment using the cardiovascular response to standing. *European Journal of Applied Physiology* 112: 4081-4089, 2012.
49. Vianna LC, Hart EC, Fairfax ST, **Charkoudian N**, Joyner MJ and Fadel PJ. Influence of age and sex on the pressor response following a spontaneous burst of muscle sympathetic nerve activity. *American Journal of Physiology: Heart and Circulatory Physiology* 302: H2419-H2427, 2012.
50. Casey DP, Curry TB, Joyner MJ, **Charkoudian N** and Hart EC. Acute β -adrenergic blockade increases aortic wave reflection in young men and women: differing mechanisms between sexes. *Hypertension* 59: 145-150, 2012.
51. Querido JS, Wehrwein EA, Hart EC, **Charkoudian N**, Henderson WR and Sheel AW. Baroreflex control of muscle sympathetic nerve activity as a mechanism for persistent sympathoexcitation following acute hypoxia in humans. *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology* R1779-R1785, 2011.
52. Hart EC, **Charkoudian N**, Wallin BG, Curry TB, Eisenach JH and Joyner MJ. Sex and ageing differences in resting arterial pressure regulation: the role of the beta-adrenergic receptors. *Journal of Physiology (London)* 589: 5285-5297, 2011.
53. Hart EC, Wallin BG, Curry TB, Joyner MJ, Karlsson T and **Charkoudian N**. Hysteresis in the sympathetic baroreflex: role of baseline nerve activity. *Journal of Physiology (London)* 589: 3395-3404, 2011.
54. Curry TB and **Charkoudian N**. The use of real-time ultrasound in microneurography. *Autonomic Neuroscience* 162: 89-93, 2011.
55. Casey DP, Curry TB, Joyner MJ, **Charkoudian N** and Hart EC. Relationship between muscle sympathetic nerve activity and aortic wave reflection characteristics in young men and women. *Hypertension* 57: 421-427, 2011.
56. Schmidt JE, Wehrwein EA, Gronbach LA, Atkinson JL, Fealey RD, **Charkoudian N** and Eisenach JH. Autonomic function following endoscopic thoracic sympathectomy for hyperhidrosis. *Clinical Autonomic Research* 21: 11-17, 2011.
57. Strom NA, Meuchel LW, Mundy DW, Sawyer JR, Roberts SK, Kingsley-Berg SM and **Charkoudian N**. Cutaneous sympathetic neural responses to body cooling in type 2 diabetes mellitus. *Autonomic Neuroscience* 159: 15-19, 2011.
58. Dutoit AP, Hart EC, **Charkoudian N**, Wallin BG, Curry TB and Joyner MJ. Cardiovascular baroreflex sensitivity is not correlated to sympathetic baroreflex sensitivity within young, healthy humans. *Hypertension* 56: 1118-1123, 2010.
59. Wallin BG, Hart EC, Wehrwein EA, **Charkoudian N** and Joyner MJ. Relationship between breathing and cardiovascular function at rest: sex related differences. *Acta Physiologica* 200: 193-200, 2010.

60. Schmitt JA, Joyner MJ, **Charkoudian N**, Wallin BG and Hart EC. Sex differences in alpha-adrenergic support of blood pressure. *Clinical Autonomic Research* 20: 271-275, 2010.
61. **Charkoudian N**, Gusman E, Joyner MJ, Wallin BG and Osborn JW. Integrative mechanisms of blood pressure regulation in humans and rats: cross-species similarities. *American Journal of Physiology: Regulatory Integrative and Comparative Physiology* 298: R755-R759, 2010.
62. Hart EC, Joyner MJ, Wallin BG, Karlsson T, Curry TB and **Charkoudian N**. Baroreflex control of muscle sympathetic nerve activity: a non-invasive measure of baroreflex sensitivity. *American Journal of Physiology: Heart and Circulatory Physiology* 298: H816-H822, 2010.
63. Strom NA, Sawyer JR, Roberts SK, Kingsley-Berg SM and **Charkoudian N**. Local sensory nerve control of skin blood flow during local warming in type 2 diabetes mellitus. *Journal of Applied Physiology* 108: 293-297, 2010.
64. Wehrwein EA, Joyner MJ, Hart EC, Wallin BG, Karlsson T and **Charkoudian N**. Blood pressure regulation in humans: calculation of an "error signal" in control of sympathetic nerve activity. *Hypertension* 55: 264-269, 2010.
65. Rabbitts JA, Strom NA, Sawyer JR, Curry TB, Dietz NM, Roberts SK, Kingsley-Berg SM and **Charkoudian N**. Influence of endogenous angiotensin II on control of sympathetic nerve activity in human dehydration. *Journal of Physiology (London)* 587: 5441-5449, 2009.
66. Hart EC, Joyner MJ, Wallin BG, Johnson CP, Curry TB, Eisenach JH and **Charkoudian N**. Age-related differences in sympathetic-hemodynamic balance in men. *Hypertension* 54: 127-133, 2009.
67. Sokolnicki LA, Strom NA, Roberts SK, Kingsley-Berg SA, Basu A and **Charkoudian N**. Skin blood flow and nitric oxide during body heating in type 2 diabetes mellitus. *Journal of Applied Physiology* 106: 566-570, 2009.
68. Hart EC, **Charkoudian N**, Wallin BG, Curry TB, Eisenach JH and Joyner MJ. Sex differences in sympathetic neural-hemodynamic balance: implications for human blood pressure regulation. *Hypertension* 53: 571-576, 2009.
69. Liu Z, Hesse C, Curry TB, Pike TL, Issa A, Bernal M, **Charkoudian N**, Joyner MJ and Eisenach JH. Ambulatory arterial stiffness index is not correlated with the pressor response to laboratory stressors in normotensive humans. *Journal of Hypertension* 27: 763-768, 2009.
70. Ramirez-Marrero FA, **Charkoudian N**, Hart EC, Schroeder DR, Zhong L, Eisenach JH and Joyner MJ. Cardiovascular dynamics in healthy subjects with differing heart rate responses to tilt. *Journal of Applied Physiology* 105: 1448-1453, 2008.
71. Bharucha AL, **Charkoudian N**, Andrews CN, Camilleri M, Sletten D, Zinzmeister AR and Low PA. Effects of glucagon-like peptide 1, yohimbine and nitergic modulation on sympathetic and parasympathetic activity in humans. *American Journal of Physiology: Regulatory and Integrative Physiology* 295: R874-R880, 2008.

72. Wilkins BW, Hesse C, **Charkoudian N**, Nicholson WT, Sviggum HP, Moyer TP, Joyner MJ and Eisenach JH. Autonomic cardiovascular control during a novel pharmacologic alternative to ganglionic blockade. *Clinical Pharmacology and Therapeutics* 83: 692-701, 2008.
73. Sokolnicki LA, Khosla S and **Charkoudian N**. Effects of testosterone and estradiol on cutaneous vasodilation during local warming in older men. *American Journal of Physiology: Endocrinology and Metabolism*, 293: E1426-E1429, 2007.
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