Abraham D. Lee, P.T., Ph.D.
Associate Professor
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Education

- B. S. in Physical Education
  Kyungpook National University,
  Daegu City, South Korea (Republic of Korea)

- M. S. in Physical Education
  Yon Sei University
  Seoul, South Korea (Republic of Korea)

- M. S. in Exercise Physiology and Cardiac Rehabilitation
  Northeastern Illinois University
  Chicago, Illinois

- Ph. D. in Exercise Science with concentration on Exercise Physiology
  Arizona State University
  Tempe, Arizona

- M. S. in Physical Therapy
  Texas Woman's University
  Houston, TX

Postdoctoral Training
Muscle glucose transport under the mentorship of John O. Holloszy, M.D.
Washington University School of Medicine
St. Louis, MO

Licensure
Physical Therapist
State of Ohio

Teaching Responsibilities

- PhyT 5110 Clinical Pathophysiology I
- PhyT 5120 Clinical Pathophysiology II
- PhyT 5270 Applied Exercise Physiology
- PhyT 5650 Pharmacology
- PhyT 6260 Cardiovascular & Pulmonary Physical Therapy

- PhyT 6170, 6180, 6190, & 7200 Scholarly Projects I-IV

Professional Activities

Dr. Lee's current research areas involve fat and carbohydrate metabolism in a whole body as well as isolated tissues to investigate factors that contribute to the development of insulin resistance and exercise-induced adaptive changes in cellular signal pathways that lead to the improvement of insulin sensitivity after exercise. Currently he is involved in testing an animal model in collaboration with Dr. T. McLoughlin in the Dept. of Kinesiology to determine if the overexpression of forkhead box O1 (FOXO1) in skeletal muscle causes changes in glucose and fat metabolism, which may lead to insulin resistance.

Dr. Lee has published the results of his metabolism-related research findings in the number of scientific journals and presented his research findings in many national scientific meetings.

Professional Membership

- American Physical Therapy Association
- Ohio Physical therapy Association
- American College of Sports Medicine
- American Physiological Society

Selected Publications

- **Abraham D. Lee**, Polly A. Hansen, Jane Schluter, Eric Gulve, Jiaping Gao and John O. Holloszy, The effect of epinephrine on insulin-stimulated glucose uptake and GLUT-4 phosphorylation. American Journal of Physiology--Cell Physiology 273: C1082-C1087, 1997

- M.N. Poy, Y. Yang, M.A. Fernstrom, **A.D. Lee**, Y. Kido and S.M. Najjar, "CEACAM1 regulates insulin clearance in liver" Nature Genetics 30:270-276, 2002

- Dai T, Abou-Rjaily GA, Al-Share' QY, Yang Y, Fernstrom MA, Deangelis AM, **Lee AD**, Sweetman L, Amato A, Pasquali M, Lopaschuk GD, Erickson SK, Najjar SM., "Interaction between altered insulin and lipid metabolism in CEACAM1-inactive transgenic mice" J. Biol. Chem. 279:45155-45161, 2004

- Koch LG, Green CL, **Lee AD**, Hornyak JE, Cicila GT, Britton SL., "Test of the principle of initial value in rat genetic models of exercise capacity" American Journal of Physiology-Regulatory, Integrative and Comparative Physiology, 288:R466-R472, 2005

- Garrett Heinrich, Sumona Ghosh,*,Anthony M. Deangelis, Jill M. Schroeder gloeckler, Payal R. Patel, Tamara R. Castaneda, Shane Jeffers, **Abraham D. Lee**, Dae Young Jung, zhiyou Zhang, Darren M. Opland, Martin G. Myers Jr., Jason K. Kim, and Sonia M. Najjar, "Carcinoembryonic Antigen-Related Cell Adhesion Molecule 2 Controls, "Energy Balance and Peripheral Insulin Action in Mice" Gastroenterology 139:644–652, 2010

- Thomas A. Bowman,* Sadeesh K. Ramakrishnan,* Meenakshi Kaw, Sang Jun Lee, Payal R. Patel, Varun K. Golla, Raymond E. Bourey, Per Magnus Haram, Lauren G. Koch, Steven L. Britton, Ulrik Wisløff, **Abraham D. Lee**, and Sonia M. Najjar, "Caloric Restriction Reverses Hepatic Insulin Resistance and Steatosis in Rats with Low Aerobic Capacity" Endocrinology 151: 5157–5164, 2010

Selected Professional Presentation

- **A.D. Lee**, T. Taylor, C. Green, A.K. Lee, L.G. Koch, K. Bensch and S.L. Britton, "Insulin-mediated rat muscle glucose transport is independent of intrinsic aerobic capacity" 2000 American Physiological Society meeting: The Integrative Biology of Exercise, Portland, Maine, 2000

- **A.D. Lee**, G.F. Szelagowski, K. Hornyak, J.E. Hornyak, IV, L.G. Koch, and S.L. Britton, "Muscle oxidative capacity differences between selectively bred rats for low or high running capacity" 49th Annual Meeting of the American College of Sports Medicine, St. Louis, MO, May 2002

- **Abraham D. Lee**, Theresa M. Frey, Soon J. Lee, Jun Liu and George T. Cicila, "Basal glucose transport activity in muscle is elevated in inbred Dahl salt-sensitive rats" Experimental Biology 2003, San Diego, CA, 2003.

- **Abraham D. Lee**, Shaun R. Sieger and mhd Adnan Alsaka, "Variability in adaptive change in glucose tolerance to exercise training" FASEB Summer Research Conference, "Glucose Transporter Biology," Snowmass Village, CO, 2003

- **Abraham D. Lee**, Keri E. Aller, Shaun R. Sieger, and mhd Adnan Alsaka, "Variability and heritability of exercise training-induced adaptive change in glucose tolerance" Experimental Biology 2004, Washington D.C., 2004.

- **Abraham D. Lee** and Lauren E. Clink**,** "Maintenance of training-induced change in glucose tolerance between low and high responders during 2 generations" Experimental Biology 2006, San Francisco, CA, 2006.
- **Abraham D. Lee** as a keynote speaker, "New concept of metabolic syndrome for physical therapy," in Taipei, Taiwan, , School of Physical Therapy, National Taiwan University, Taipei, Taiwan, November 12-13, 2011

- **Abraham D. Lee**, "Implications of Metabolic Syndrome to Physical Therapy Practice" Korea University, Seoul, South Korea, November 17, 2011

- **Abraham D. Lee**, and Rick Black "Rehabilitation strategies for patients with diabetes mellitus and associated complications: treatment and prevention" APTA Combined Section Meeting 2012 (Chicago, IL).

- **Abraham D. Lee** as a keynote speaker, "Role of Exercise in Preventing and Treating Metabolic Syndrome: Biological Mechanistic Perspective" Research Symposium, Dept. of Kinesiology, The University of Toledo, April 27, 2012

- **Abraham D. Lee**, Aaron M. Al-sorghali, Carrie E. Woods, Anthony J. Rampulla, and Thomas J. McLoughlin, Hepatic glycolytic capacity decreases in mice with a FoxO1 overexpression in skeletal muscle" " Experimental Biology 2013, Boston, MA, 2013.

Curriculum Vitae
- Available upon request