

Young-Eun Cho, Ph.D. RN
Assistant Professor

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EDUCATION

2010 PhD Yonsei University College of Medicine
Vascular physiology
2005 MS Yonsei University College of Medicine
2001 BS Yonsei University College of Nursing - Nursing

PhD Dissertation:

Enhanced contraction and myosin phosphorylation induced by Ca²⁺-independent MLCK in spontaneously hypertensive rats (*Cardiovasc Res.* 2011;91(1):162-170)

Master's Thesis:

Intracellular acidosis induced myogenic tone change in rabbit basilar artery: Role of extracellular Ca²⁺, SR Ca²⁺ release and Ca²⁺ sensitization (*Vascul Pharmacol.* 2007;47(1):74-82)

LICENSURES AND CERTIFICATIONS

Licenses

2000 Registered Nurse in S. Korea (#1666792)
2020 Registered Nurse in Iowa (#160789)

PROFESSIONAL EXPERIENCE

Clinical

10/2002-8/2003 Clinical Research Associate in Choongwae pharmaceutical corporation (Seoul, Korea);
▪ Overseeing the clinical trials for a new statin drug
▪ Participating in developing the protocol for other clinical trials
4/2001-10/2002 Registered nurse in Thoracic surgery ICU in Samsung Medical Center (Seoul, Korea)
▪ Providing the intensive cares for adult and infant patients who undergo heart, lung and esophagus surgeries

- Developing the protocol for the ICU nursing care

Research

- 8/2019-present Assistant Professor, University of Iowa, College of Nursing; Obesity Research and Education Initiative
- 1/2016-8/2019 Research fellow, National Institute of Nursing Research, National Institutes of Health
- Single cell RNA-sequencing project in PBMCs from minor stroke
 - Exosomal miRNA changes with Mediterranean diet in breast cancer survivors
 - Exosomal protein changes with weight gain in kidney transplant recipients
 - Altered DNA methylation patterns with PTSD symptoms
- 9/2014-1/2016 Visiting Fellow, National Institute of Nursing Research, National Institutes of Health
- Gene expression in old TBI patients linked to MRI images
 - Increased oxidative stress in weight gain of kidney transplant recipients
- 3/2011-8/2014 Postdoctoral Fellow, University of Illinois at Chicago College of Medicine
- Endothelial dysfunction and oxidative stress in coronary artery of type 2 diabetic mice
 - Increased oxidative stress in cardiac hypertrophy of miR450 knockout mice

HONORS AND AWARDS

- 2020 Best article award (Journal of Korean Biological Nursing Science)
- 2018 Performance Award: National Institute of Nursing Research in NIH
- 2013 BCVS Abstract Travel Grant: American Heart Association's Council on Basic Cardiovascular Sciences (BCVS)
- 2009 Excellent poster presentation award: the 61th federation meeting of Korean physiological society

SCHOLARSHIP

Publications

Peer Reviewed Papers

(Note: * indicates co-first authors)

1. Kwon YJ*, **Cho YE***, Cho AR, Choi WJ, Yun S, Park H,... Lee JW (2020). The Possible Influence of Mediterranean Diet on Extracellular Vesicle miRNA Expression in Breast Cancer Survivors. *Cancers (Basel)*, 12(6):1355. doi: 10.3390/cancers12061355.
2. **Cho YE**, Lee H, Yun S, Kim HS, Cashion AK. (2020). Exosomal protein profiles as novel biomarkers in weight gain after kidney transplantation: a pilot study. *Journal of Korean*

Biological Nursing Science, 22(2):1-8. doi.org/10.7586/jkbns.2020.22.2.119 (This journal is indexed in EBSCO Discovery Service)

3. Edwards KA, Motamedi V, Osier ND, Kim HS, Yun S, **Cho YE**,... Gill JM (2020). A Moderate Blast Exposure Results in Dysregulated Gene Network Activity Related to Cell Death, Survival, Structure, and Metabolism. *Front Neurol*, 26(11):91. doi: 10.3389/fneur.2020.00091.
4. Martin C* and **Cho YE***, Kim HS, Yun SJ, Kanefsky R, Lee H,... Gill J (2018). Altered DNA Methylation Patterns Associated With Clinically Relevant Increases in PTSD symptoms and PTSD Symptom Profiles in Military Personnel. *Biological Research in Nursing*, 20(3):352-358. doi: 10.1177/1099800418758951
5. Hladek MD, Szanton SL, **Cho YE**, Lai C, Sacko C, Roberts L, Gill J (2018). Using sweat to measure cytokines in older adults compared to younger adults: A pilot study. *J Immunol Methods*, Mar(454):1-5. doi: 10.1016/j.jim.2017.11.003
6. Pantik C, **Cho YE**, Hathaway D, Tolley E, Cashion AK (2017). Characterization of body composition and fat mass distribution one year after kidney transplantation. *Progress in Transplantation*, 27(1):10-15. doi: 10.1177/1526924816681007
7. **Cho YE**, Latour L, Kim HS, Olivera A, Livingston W, ...Gill J and Cashion AK (2016). Older Age Results in Differential Gene Expression after Mild Traumatic Brain Injury and is Linked to Imaging Differences at Acute Follow-up. *Frontiers in aging neuroscience*, 13(8);168. doi: 10.3389/fnagi.2016.00168
8. **Cho YE**, Kim HS, Lai C, Stanfill A, Cashion AK (2016). Oxidative stress is associated with weight gain in recipients at 12-months following kidney transplantation. *Clinical Biochemistry*, 49(3):237-42. doi: 10.1016/j.clinbiochem.2015.11.002
9. **Cho YE**, Cashion AK (2016). Mechanism of Weight Gain in Kidney Transplantation Recipients. *Keimyung Journal of Nursing Science*, 19(3):71-79
10. Han Y, **Cho YE**, Ayon R, Youssef K, Pan M, Dai A, Yuan J, Makino A (2015). SGLT Inhibitors Attenuate NO-dependent Vascular Relaxation in Pulmonary Artery but not in Coronary Artery. *Am J Physiol Lung Cellular and Molecular Physiology*, 309(9):L1027-36. doi: 10.1152/ajplung.00167.2015.
11. **Cho YE**, Zhang C, Ranjan R, Chistman JW, Xiao L and Zhao Q (2015). microRNA(miR)-451 Regulates Cardiac Growth and Myocardial Reactive Oxidative Species (ROS) Level via Nrf2 and AMPK Pathways. *Circulation*, 132:A16546 doi.org/10.1161/circ.132.suppl_3.16546 (Abstract publication)
12. **Cho YE**, Basu A, Dai A, Heldak M, Makino A (2013). Coronary endothelial dysfunction and mitochondrial reactive oxygen species in type 2 diabetic mice. *Am J Physiol Cell Physiol*, 305(10):C1033-40. doi: 10.1152/ajpcell.00234.2013.

13. Sasaki K, Donthamsetty R, Heldak M, **Cho YE**, Scott BT, Makino A (2012). VDAC: Old Protein with New Roles in Diabetes. *Am J Physiol Cell Physiol*, 303(10):C1055-6. doi: 10.1152/ajpcell.00087.2012.
14. Lim M, Choi SK, **Cho YE**, Yeon SI, Kim EC, Ahn DS, Lee YH (2012). The role of sphingosine kinase 1/sphingosine-1-phosphate pathways in the myogenic tone of posterior cerebral arteries. *Plos One*, 7(4):e35177. doi: 10.1371/journal.pone.0035177
15. **Cho YE**, Ahn DS, Morgan KG, Lee YH (2011). Enhanced contraction and myosin phosphorylation induced by Ca²⁺-independent MLCK in spontaneously hypertensive rats. *Cardiovasc Res*, 91(1):162-170. doi: 10.1093/cvr/cvr043
16. **Cho YE**, Ahn DS, Kim YH, Taggart MJ, Lee YH (2007). Changes in stretch-induced tone induced by intracellular acidosis in rabbit basilar artery: effects on BK_{Ca} channel activity. *Vascul Pharmacol*, 47(1):74-82. doi: 10.1016/j.vph.2007.04.006
17. Ahn DS, Choi SK, Kim YH, **Cho YE**, Shin HM, Morgan KG, Lee YH (2007). Enhanced stretch-induced myogenic tone in the basilar artery of spontaneously hypertensive rats. *J Vasc Res*, 44(3):182-91. doi: 10.1159/000100374.
18. Ryu SK, Ahn DS, **Cho YE**, Choi SK, Kim YH, Morgan KG, Lee YH (2006). Augmented sphingosylphosphorylcholine-induced Ca²⁺-sensitization of mesenteric artery contraction in spontaneously hypertensive rat. *Naunyn Schmiedebergs Arch Pharmacol*, 373(1):30-6. doi: 10.1007/s00210-006-0036-7
19. Jang GJ, Ahn DS, **Cho YE**, Morgan KG, Lee YH (2005). C₂-ceramide induces vasodilation in phenylephrine-induced pre-contracted rat thoracic aorta: role of RhoA/Rho-kinase and intracellular Ca²⁺ concentration. *Naunyn Schmiedebergs Arch Pharmacol*, 372(3):242-50. doi: 10.1007/s00210-005-0008-3

Publications under revision

Cho YE, Lee H, Bae HR, Kim H, Yun S, Vorn R,... Gill J (under revision). A circulating immune cell landscape in mild ischemic stroke patients. *Stroke and Vascular Neurology*

Scientific and Educational Research Grants

Intramural research grants

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| 2020-2022 | Cho, Y-E (PI). Extracellular Vesicles in Breastmilk: a Mediator between Obese Mothers and Children. The Fraternal Order of Eagles Diabetes Research Center (FOEDRC) in University of Iowa, College of Medicine, \$100,000 for 2 years |
| 2021 | Cho, Y-E (PI). Impact of obesity and pollutants on breast milk in Iowa mothers. University of Iowa EHSRC pilot grant award, unfunded. |
| 2021 | Cho, Y-E (PI). Impact of obesity and pollutants on breast milk in Iowa mothers. University of Iowa Jumpstarting Tomorrow, unfunded. |
| 2021 | Cho, Y-E and Moon, C (co PIs). Towards the Development of an Integrated Model of |

2020 Circadian Rhythm Activity and Alzheimer's Disease in Metabolic Syndrome. CAMS pilot grant in the University of Iowa, College of Nursing, unfunded.
Cho, Y-E (PI). Transcriptome Profiles in Breastmilk of Obese Mothers. International Society of Nursing in Genetics (ISONG) research grant, unfunded.

Extramural research grants

2013-2014 Cho Y-E (Post-doctoral Fellow). Role of p67phox in Myocardial Hypertension. National Research Foundation of Korea, \$33,000.

Training grants

2021 Old Gold Summer Fellowships, \$6,000
2021 Summer Grant Writing Support, \$3,000

Research and Clinical Presentations

International

1. 2021, **Cho, YE**, *Characteristics of Extracellular Vesicle miRNAs in the Breast Milk*. American Heart Association's Scientific Sessions, Boston, MA. Virtual meeting. Poster
2. 2019, **Cho, YE**, *Changes in circulating miRNA profiles after dietary interventions*. International Society of Nurses in Genetics 2019 Congress, San Antonio, TX. Poster
3. 2018, **Cho, YE**, *Exosomal protein profiles and weight gain after kidney transplantation*. International Society of Nurses in Genetics, 2018 Congress in Orlando, FL. Oral
4. 2017, **Cho, YE**, *Altered DNA methylation patterns associated with clinically relevant increases in PTSD symptoms and PTSD symptom profiles in military personnel*. Experimental Biology, The American Physiological Society Physiological Genomics Interest Group Annual Research Conference, Chicago, IL. Oral
5. 2015, **Cho, YE**, *microRNA(miR)-451 regulates cardiac growth and myocardial reactive oxidative species (ROS) level via Nrf2 and AMPK and pathways*. American Heart Association's Scientific Sessions, Orlando, FL. Poster
6. 2013, **Cho, YE**, *Novel role of microRNA (miR)-451 in modulation of oxidative stress and kinase signaling in mouse myocardium*. American Heart Association Scientific Sessions, Dallas, TX. Oral
7. 2012, **Cho, YE**, *Role of superoxide in endothelial dysfunction in coronary artery from a mouse model of type 2 diabetes*. Experimental Biology, San Diego, CA. Poster

National

1. 2021, Zhang M, **Cho YE**, and Moon C, *The Relationship Between Neuropsychiatric Symptoms, Nighttime Behaviors, and Alzheimer's Disease CSF Biomarkers* The Gerontological Society of America Annual Scientific Meeting, Virtual meeting. Poster
2. 2009, **Cho, YE**, *Role of Ca²⁺ independent myosin light chain kinase in hypertension*. The 61st Federation Meeting of Korean Physiological Society. Seoul, Korea. Poster
3. 2008, **Cho, YE**, *Intracellular acidosis induced myogenic tone change in rabbit basilar artery- Role of Ca²⁺ influx, SR Ca²⁺ release and Ca²⁺ sensitization*. The 57th Federation

Meeting of Korean Physiological Society, Seoul, Korea. Poster

Regional

1. 2021, **Cho, YE**, *Extracellular Vesicles in Breast Milk; mediators between obese mother and children*, Midwest Nursing Research Society, Virtual Conference. Poster
2. 2018, **Cho, YE**, *Single cell clustering of PBMCs by using ddSeq technology*. Molecular Biology in Single Cells Symposium, NIH, Bethesda, MD. Poster

Local

1. 2021 **Cho, YE**, *Changes in circulating miRNA profiles after dietary interventions*. Presented at the 6th Annual University of Iowa Nursing Recognition Day, Iowa City, IA.
2. 2021 Invited speaker in the NINR's NEWS meeting "The Single Cell RNA-seq in Mild Stroke Patients"

SERVICE

Editorial and Peer Review Service

- 2021- Guest reviewer of *Nutrition*
2020- Guest reviewer of *Frontiers in Physiology, section Vascular Physiology*

Membership

- 2021- present Professional Member; American Heart Association
2020- present Midwest Nursing Research Society; RIG- Physiology, Behavior, Genomics, & Society
2019-present Member of the Fraternal Order of Eagles Diabetes Research Center in U of Iowa Carver College of Medicine
2017- present International Society of Nurses in Genetics
2013-2014 Trainee membership; American Heart Association

Professional Service

- 2017- 2020 International Society of Nurses in Genetics Communication committee
2020 Midwest Nursing Research Society; RIG- Physiology, Behavior, Genomics, & Society Abstract Reviewer
1999 Student Representative in International Council of Nursing (London, UK)

Collegiate Service

- 2020-present BSN Admissions Committee
2020-present Center Associate, Center for Advancing Multimorbidity Science: Profiling risk and symptom expression to develop customized therapies for adults with multiple chronic conditions (CAMS, 1 P20 NR018081-01, University of Iowa, College of Nursing
2020 U of Iowa College of Nursing, Nursing Honor Program applicants reviewer

TEACHING

Courses

- 9/2021-present DNP: Doctor of Nursing Practice Project I
- 9/2021-present End of Life Care for Adults & Families
- 9/2020-present RN-BSN: Pathology
- 9/2020-6/2021 RN-BSN: Introduction in Human Genetics
- 2/2021 Invited lecturer: Biological Markers in Health Research
- 9/2010-2/2011 Adjunct instructor in Seoul National University College of Nursing: undergraduate Patho-physiology course of ~100 students. Developed lectures on;
- Disorders of Hematology System, Cardiovascular System, Respiratory System, Gastrointestinal System, and Urinary System
 - Fluid, Electrolyte & Acid-Base Homeostasis
- 3/2005-2/2011 Teaching assistant in Yonsei University College of Medicine: Led physiology labs of ~100 medical school students.
- Cellular physiology
 - Respiratory physiology
 - Renal physiology
 - Neuromuscular physiology
 - Cardiovascular physiology

Mentoring

- 2020-present Janhavi Narayanaswamy (MS. Volunteer in the lab)
- 2019- present Young Scientist Program, The University of Iowa, College of Nursing (Gracie Torres, Alaria Harken and Reegan Schmidt)
- 2017-2019 Mentoring for summer students and post-baccalaureates in NINR
- Taylor Brewer (Summer student, 2018); Exosome research
 - Sara Mithani (Graduate Partnership Program fellow, 2017); TBI research with big data analysis
 - Tamar Rodney (Research Residence, 2017 and currently assistant professor at The Johns Hopkins University); TBI research with various lab skills
- 2014 Summer Science Camp lecturer in Hanul Family Alliance (Chicago, IL); Microbiology overview

SKILLS and TRAINING

- 2021 Ingenuity Pathway Analysis (IPA) virtual training (Sep 2021)
- 2020 Healthy Lifestars Conference: improving health outcomes through preventing childhood obesity conference (11-18-2020)
- 2020 An Institute for Nursing Leadership Critical Conversation on Health Equity and Racism and In-Depth Dialogues (10-29-2020)
- 2018 Exosome Workshop: Exosomes; Principles, Methods and Applications (4 Day training workshop from BioTrac)

- 2018 Management Bootcamp (NIH Office of Intramural Training & Education)
 - 2017 Leadership Training: Work Place Dynamics Series (NIH Office of Intramural Training & Education)
 - 2017 Next Generation Sequencing 3 Day Training Workshop; BioTrac and Yotta Biomed, LLC
- Computer skills: Proficient in Excel, PowerPoint, Word, and SPSS, Experience using: IPA and Partek