

CV



Name	Chiao-Nan Chen
Organization	Department of Physical Therapy and Assistive Technology
Position	Associate Professor
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Major Research Area	Exercise Physiology Biology of Aging Cardiopulmonary Physical Therapy

Education

Ph. D., Rehabilitation Science, University of Minnesota

Master, Physical Therapy, National Taiwan University

Bachelor, Physical Therapy, Chang Gung University

Experience

2017-Present	Associate Professor, Department of Physical Therapy and Assistive Technology, National Yang-Ming University
2015-2017	Associate Professor, Department of Physical Therapy Chang Gung University
2009-2015	Assistant Professor, Department of Physical Therapy, Chang Gung University
2000-2003	Therapist, Chang Gung Memorial Hospital

Courses

Gerontology and Successful Aging

Health Promotion and Functional Restoration: Theory and Evidence

Publications

Journal Publications

1. Chen C-N, Liao Y-H, Tsai S-C, Thompson LV. Age-dependent effects of caloric restriction on mTOR and ubiquitin-proteasome pathways in skeletal muscles. *Geroscience*. 2019 Dec; 41(6), 871-880.
2. Hsu K-J, Liao C-D, Tsai M-W, Chen C-N. Effects of exercise and nutritional intervention on body composition, metabolic health, and physical performance in adults with sarcopenic obesity: a meta-analysis. *Nutrients*. 2019 Sep; 11(9): E2163.
3. Liao Y-H, Chen C-N, Hu C-Y, Tsai S-C, Kuo Y-C. Soymilk ingestion immediately after therapeutic exercise enhances rehabilitation outcomes in chronic stroke patients: A randomized controlled trial. *NeuroRehabilitation*. 2019 April; 44(2):217-229.
4. Chen S-C, Wang H-H, Chen C-N, Li G-S, Chien K-U. A community application-oriented measuring distance for walking speed tests in the middle-aged and older adults. *Physical Education Journal* 2018 Dec; 51(4): 463-472.
5. Liao Y-H, Chen C-Y, Chen C-N, Wu C-Y, Tsai S-C. An Amino Acids Mixture Attenuates Glycemic Impairment but not Affects Adiposity Development in Rats Fed with AGEs-containing Diet. *Int J Med*

Sci 2018 Jan;15(2):176-187.

6. Chen C-N, Lin S-Y, Liao Y-H, Yu J-X, Li Z-J, Lin Y-C, Chang G-J, Lin C-H, Wong M-K. Diet-induced obesity impairs blood lactate metabolism of rats in response to incremental exercise. *Am J Physiol - Regulatory, Integrative and Comparative Physiology*. 2017 Nov; 313(5): R601-R607.
7. Chen C-N. Muscle aging, calorie restriction and resveratrol. *Adaptive Medicine*. 2017; 9(1): 15-22.
8. Lin Y-Y, Hsieh P-S, Cheng Y-J, Cheng S-M, Chen C-N, Huang C-Y, Kuo C-H, Kao C-L, Shyu W-C, Lee S-D. Anti-apoptotic and pro-survival effects of food restriction on high-fat diet-induced obese Hearts. *Cardiovasc Toxicol*. 2017 Apr; 17(2):163-174.
9. Chen C-N. Prevention of disability in the elderly. *The Journal of Long-term Care*. 2015 Sep; 19(2) 149-156.
10. Chen C-N, Lin S-Y, Liao Y-H, Li Z-J, Wong M-K. Late-onset caloric restriction alters skeletal muscle metabolism by modulating pyruvate metabolism. *Am J Physiol Endocrinol Metab*. 2015 June; 308(11): E942-9. (SCI) (NSC 101-2314-B-182-006-MY3)
11. Chen C-N, Chuang LM, Korivi M, Wu YT. Home-based exercise may not decrease the insulin resistance in individuals with metabolic syndrome. *J Phys Act Health*. 2015 March; 12(1): 74-79. (SSCI)
12. Chen C-N, Hwang A-W, Lin S-Y, Lin Y-C. Initiation of movement and energy expenditure in children with developmental delay: A case-control study. *Phys Ther*. 2014 Oct;94(10):1134-1442. (SCI)
13. Chen C-N, Graber TG, Bratten WM, Ferrington DA, Thompson LV. Immunoproteasome in animal models of Duchenne muscular dystrophy. *J Muscle Res Cell Motil*. 2014 June;35(2):191-201. (SCI)
14. Hwang AW, Wu IC, Chen C-N, Cheng H YK, Chen CL. The correlates of body mass index and risk factors for being overweight among preschoolers with motor delay. *Adapt Phys Activ Q*. 2014 Apr; 31(2):125-143. (SCI)
15. Chen C-N, Thompson LV. Interplay Between Aging and Unloading on Oxidative Stress in Fast-Twitch Muscles. *J Gerontol A-Biol*. 2013 Jul; 68(7):793-802. (NSC 99-2320-B-182-001-) (SCI)
16. Templeton DL, Mosser KH, Chen CN, Stone MD, John R, Dengel DR, Thompson LV. Effects of left ventricular assist device (LVAD) placement on myocardial oxidative stress markers. *Heart Lung Circ*. 2012 Sep; 21(9):586-97. (SCI)
17. Wu YT, Hwang CL, Chen C-N, Chuang LM. Home-based exercise for middle-aged Chinese at diabetic risk: A randomized controlled trial. *Prev Med*. 2011 May; 52(5):337-43. (SCI)
18. Chen H-C, Hung S-S, Chen C-N, Cheng H-Y. Materials and applications of assistive technology devices for the elderly: the prevention of fall and the fall-related fracture. *Industrial Materials* 2010 Dec; 288:102-108.
19. Xu X, Chen C-N, Arriaga EA, Thompson LV. Asymmetric superoxide release inside and outside the mitochondria in skeletal muscle under conditions of aging and disuse. *J Appl Physiol*. 2010 Oct;109(4):1133-9. (SCI)
20. Chen C-N, Brown-Borg HM, Rakoczy SG, Ferrington DA, Thompson LV. Aging Impairs the Expression of Glutamate Cysteine Ligase Catalytic Subunit in Soleus Muscle Under Stress. *J Gerontol A-Biol*. 2010 Feb; 65(2):129-37. (SCI)
21. Chen C-N, Ferrington DA, Thompson LV. Carbonic Anhydrase III and Four-and-a-Half LIM Protein 1 are Preferentially Oxidized with Muscle Disuse. *J Appl Physiol*. 2008; 105: 1554-61. (SCI)
22. Chen C-N, Chuang L-M, Wu Y-T. Clinical Measures of Physical Fitness Predict Insulin Resistance in

- Individuals at Risk of Diabetes. *Phys Ther.* 2008; 88(11):1355-64. (SCI)
23. Chen C-N, Brown-Borg HM, Rakoczy SG, Thompson LV. Muscle Disuse: Adaptation of Antioxidant Systems is Age-Dependent. *J Gerontol A-Biol.* 2008;63(5):461-6. (SCI)
 24. Zhong S, Chen C-N, Thompson LV. Sarcopenia of Aging: Functional, Structural and Biochemical Alterations. *Brazilian Journal of Physical Therapy* 2007;11(2):91-97.
 25. Chen C-N, Thompson LV. Ischemia-Reperfusion, Oxidative Stress and Muscle Dysfunction. *Formosan Journal of Physical Therapy* 2007; 32(4): 226-33.
 26. Chiang LL, Chen C-N, Tsao JY, Wu YT. Investigation of Physical Therapy Utilization in Integrated Delivery System among Patients with Long-Term Mechanical Ventilation. *Formosan Journal of Physical Therapy* 2006; 31(1): 39-45.

Conference Publications

1. Chen C-N, Yu J-X, Lin S-Y, Li Z-J. Late onset Caloric Restriction Alters Skeletal Muscle Metabolism by Modulating Pyruvate Metabolism. *Advances in skeletal muscle biology in health and disease.* Gainesville, Florida. January 20-22, 2016.
2. Lin Y-C, Chen C-N, Chih Y-M. Type II muscles are more susceptible to contractile activity-induced injury. *Experimental Biology* 2015. Boston, USA, March 28-April 1, 2015.
3. Yu J-X, Lin S-Y, Li Z-J, Chen C-N. Late-onset calorie restriction alters skeletal muscle metabolism by modulating pyruvate metabolism. *Experimental Biology* 2015. Boston, USA, March 28-April 1, 2015.
4. Lin S-Y, Yu J-X, Li Z-J, Chen C-N. The influence of high fat diet on exercise performance and energy and lactate metabolism. *The 30th Joint Annual Conference of Biomedical Science.* Taipei, Taiwan, March 21-22, 2015.
5. Chen C-N, Chen H-Y, Yang C-M. Redox signaling in skeletal muscles following contractile activities: effects of aging. *Gordon Research Conference on Oxidative Stress and Disease.* Ventura, California, USA, March 1-6, 2015
6. Lin S-Y, Chen C-N. Effects of diet on muscle strength, mitochondria function, and metabolic parameters of old rats. *Experimental Biology* 2014. San Diego, USA, April 26-30, 2014.
7. Yu J-X, Chen C-N, Lin S-Y, Lin Y-C. Effects of dietary on the changes of mitochondrial function are not via altering of activity level of rats. *The 67th Scientific Conference of Physical Therapy Association of Taiwan.* Taipei, Taiwan, March 29, 2014.
8. Chen C-N, Lin S-Y, Li Z-J, Ou Y-M, Lai Z-H. Age-dependent effect of calorie restriction on metabolic parameters and exercise performance of rats. *WCPT-AWP & ACPT Congress* 2013. Taichung, Taiwan, September 5-9, 2013.
9. Chen C-N: Muscle Adaptation to Contractile Activity: Effects of Aging. *42nd Annual Meeting of the American Aging Association.* Baltimore, USA. May 31-June 3, 2013
10. Li Z-J, Chen C-N. Effects of high-fat diet on metabolic parameters and exercise performance of young and adult rats. *Experimental Biology* 2013. Boston, USA, April 20-24, 2013
11. Chen C-N, Li Z-J, Chung W-Z, Lin Y-J. Effects of high-Fat diet and calorie restriction on muscle function and exercise capacity of rats. *The 64th Scientific Conference of Physical Therapy Association of Taiwan.* Taipei, Taiwan, March 31-April 1, 2012.
12. Chen C-N, Wang C-Y, Thompson LV. Muscle disuse: changes of antioxidants and oxidative stress are age-dependent. *The 63th Scientific Conference of Physical Therapy Association of Taiwan.* Tao-Yuan, Taiwan, September 24, 2011.

13. Chen C-N, Thompson LV, Wang C-Y, Lee Y-K. Aging exacerbates oxidative stress in disused type II muscles. American Aging Association 40th Annual Meeting: Mechanisms of Aging: Emerging Concepts. Raleigh, North Carolina, USA, June 3-6, 2011.
14. Wu Y-Y, Chen C-N, Chung H-C, Yang S-C, Lin Y-C, Lin S-Y, Lee S-U, Liu W-T, Wang J-S. The effect of visual signal addition on the results of shuttle walking test in healthy adults. The 62th Scientific Conference of Physical Therapy Association of Taiwan. Taipei, Taiwan, March 19-20, 2011.
15. Lin Y-C, Chen C-N, Lin S-Y, Yang S-C, Chung H-C, Wu Y-Y, Wu I-C, Hwang A-W. The comparison of physiological cost index of walking in normal children and children with developmental delay: a pilot study. The 62th Scientific Conference of Physical Therapy Association of Taiwan. Taipei, Taiwan, March 19-20, 2011.
16. Wu Y-T, Chou C-H, Hwang C-L, Chen C-N. Effects of menopause and home-based exercise with behavioral enhancement strategy on metabolic risk factors in perimenopausal women. The 62th Scientific Conference of Physical Therapy Association of Taiwan. Taipei, Taiwan, March 19-20, 2011.
17. 張敬岳、陳盈如、廖佳芳、劉文瑜、陳喬男、連恒裕 (九十九年十月). “玩 Wii Fit TM 的平衡訓練時的心跳速率變化” 壁報展示，中華民國物理治療學會第六十一次學術研討會，台中。
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18. Chen C-N, Brown-Borg HM, Rakoczy SG, Thompson LV. Nrf2 is associated with the impaired GSH metabolism. Gordon Research Conferences: Biology of Aging. Les Diablerets, Switzerland, August 21-27, 2010.
19. Chen C-N, Brown-Borg HM, Ferrington DA, Thompson LV. Aging impairs the expression of glutamate cysteine ligase catalytic subunit in muscle under stress. Gordon Research Conferences: Biology of Aging. Ventura, California, February 15-20, 2009.
20. Chen C-N, Ferrington DA, Brown-Borg HM, Thompson LV. Muscle disuse: the adaptations of antioxidant systems and protein oxidative modifications are age-dependent. Gordon Research Conferences: Biology of Aging. Les Diablerets, Switzerland, September 23-28, 2007.
21. Chen C-N, Thompson LV. Inactivity-induced oxidative stress. Gordon Research Conferences: Oxidative stress and disease. Ventura, California, March 11-16, 2007.
22. Zhong S, Chen C-N, Barnett V, Thompson LV. Single skeletal fiber passive contractile properties do not explain age-related muscle stiffness. The 59th Annual Scientific Meeting of Gerontological Society of America. Dallas, Texas, November 16-20, 2006.
23. Chen C-N, Chuang L-M, Chen H-H, Wu Y-T. Comparison of exercise effects in subjects with diabetic risk and with metabolic syndrome. FJPT 2005;30(2):91.
24. Hsu C-L, Kao M-Y, Chen C-N, Wu Y-T. Factors influencing postural stability in diabetic patients. FJPT 2004;29(5):348.
25. Chen C-N, Chuang L-M, Wu Y-T. Association of insulin resistance with physical fitness in subjects having diabetic risk factor. FJPT 2004;29(5):347.
26. Chen C-N, Huang K-E, Kang S-P, Wu Y-T. Heart rate variability in athletes – A pilot study. FJPT 2004;29(2):154.
27. Chen C-N, Wu Y-T, Wang L-Y. Changes in ventilatory function and oxygen uptake with pursed-lip breathing in healthy man. FJPT 2003;28(5):277.