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Physical Therapy  
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## Area of Expertise

Dr. Liu has focused his research on the following areas: "Effects Of Inappropriate Use Of Assistive Ambulatory Devices (AADS) On Gait, Balance, And Posture," physical therapy and alternative medical interventions (like tai chi and qi gong) to improve gait, balance, and posture in older populations and AAD users, bioengineering intervention/design to modify assistive ambulatory devices, and identification of musculoskeletal variations in cadavers in anatomy gross lab. Throughout his career he has published extensively and has engaged and supervised a large number of PT students in research projects.

## Qualifications

PhD in Anatomy, University of Mississippi  
MPT, University of Mississippi  
MD, Jiangxi Medical College

## Recent Publications

### **Effects of elastic band exercise on the frailty states in pre-frail elderly people**

Chen, R., Wu, Q., Wang, D., Li, Z., Liu, H., Liu, G., Cui, Y. & Song, L., 1 Jan 2019, In : Physiotherapy Theory and Practice.

### **Effects of elastic therapeutic taping on knee osteoarthritis: A systematic review and meta-analysis**

Li, X., Zhou, X., Liu, H., Chen, N., Liang, J., Yang, X., Zhao, G., Song, Y. & Du, Q., 1 Apr 2018, In : Aging and Disease. 9, 2, p. 296-308 13 p.

### **Effect of therapeutic exercise on knee osteoarthritis after intraarticular injection of botulinum toxin type a, hyaluronate or saline: A randomized controlled trial**

Bao, X., Tan, J. W., Flyzik, M., Ma, X. C., Liu, H. & Liu, H. Y., 1 Jan 2018, In : Journal of Rehabilitation Medicine. 50, 6, p. 534-541 8 p.

### **Enhanced cerebral perfusion during brief exposures to cyclic intermittent hypoxemia**

Liu, X., Xu, D., Hall, J. R., Ross, S. E., Chen, S., Liu, H., Mallet, R. T. & Shi, X., 1 Dec 2017, In : Journal of applied physiology (Bethesda, Md. : 1985). 123, 6, p. 1689-1697 9 p.

### **Differences in the limits of stability between older rolling walker users and older single-tip-cane users — a preliminary study**

Liu, H., Quiben, M. C., Holmes, C., Connors, M. J. & Salem, Y., 1 Mar 2017, In : Rehabilitation Nursing. 42, 2, p. 109-116 8 p.

### **A home-based exercise program for children with congenital heart disease following interventional cardiac catheterization: Study protocol for a randomized controlled trial**

Du, Q., Salem, Y., Liu, H., Zhou, X., Chen, S., Chen, N., Yang, X., Liang, J. & Sun, K., 23 Jan 2017, In : Trials. 18, 1, 38.

### **Aerobic exercise training improves orthostatic tolerance in aging humans**

Xu, D., Wang, H., Chen, S., Ross, S. E., Liu, H., Yurvati, A., Raven, P. B. & Shi, X., 1 Jan 2017, In : Medicine and Science in Sports and Exercise. 49, 4, p. 728-735 8 p.

### **Effects of intermittent pressure imitating rolling manipulation on calcium ion homeostasis in human skeletal muscle cells**

Zhang, H., Liu, H., Lin, Q., Zhang, G. & Mason, D. C., 26 Aug 2016, In : BMC Complementary and Alternative Medicine. 16, 1, 314.

**Vastus medialis oblique and vastus lateralis activity during a double-leg semisquat with or without hip adduction in patients with patellofemoral pain syndrome**

Miao, P., Xu, Y., Pan, C., Liu, H. & Wang, C., 12 Oct 2015, In : BMC Musculoskeletal Disorders. 16, 1, 289.

**Comparison of surface landmarks for measuring the individualized height of rolling walker**

Zhao, Y., Salem, Y., Li, M., Master, H. & Liu, H., 1 Jan 2015, In : Physical and Occupational Therapy in Geriatrics. 33, 2, p. 128-138 11 p.

## **Sponsored Projects**

**Effect of Combined Whole Body Vibration Therapy with Therapeutic Exercise for Patients with Multiple Sclerosis**

Liu, H. (. , Holmes, V., Salem, Y., Camp, K. & Quiben, M.

Intramural Research(UNTHSC)

1/07/16 → 31/12/17

**Gait Parameters of Walking and Turning with Rolling Walker (For: Richard Barber)**

Liu, H. (. .

Intramural Research(UNTHSC)

1/03/16 → 28/02/17

**Physical Function in Children with Velo-Cardio-Facial Syndrome (VCFS) - 22q11.2 Deletion Syndrome**

Salem, Y. & Liu, H. (. .

Texas Physical Therapy Foundation

4/11/13 → 4/11/14

**Postural Influence of Gait Parameters in People with Rolling Walker Ambulation**

Liu, H. (. .

Intramural Research(UNTHSC)

1/10/14 → 30/09/15

**Reliability and Accuracy of Measurements of Balance Gear in Young and Older Subjects**

Liu, H. (. , Salem, Y., Arguello, E. & Quiben, M.

Alexandave Industries

27/06/16 → 27/01/17

**Smartwalker - A New Design of Rolling Walker to Reduce Falls and Walker-use Related Side Effects**

Liu, H. (. .

Intramural Research(TxMRC)

1/06/14 → 31/05/15

**Use of Yoga for Young Children with Down Syndrome**

Salem, Y. & Liu, H. (. .

Intramural Research(UNTHSC)

1/04/14 → 31/08/15

**Whole Body Vibration Therapy for Individuals with Acute Stroke**

Salem, Y., Liu, H. (. & Richardson, M.

Texas Physical Therapy Foundation

3/11/15 → 3/11/16