

Mark Walsh, PhD.
Assistant Professor
Department of Physical Education, Health and Sports Studies
Miami University, Oxford, Ohio

Work phone (513) 529-2708
email: Walshms@muohio.edu

EDUCATION:

- B.S. California State University Los Angeles (1992)
Major: Nutritional Science
- M.S. California State University Northridge (1994)
Major: Biomechanics
- Ph.D. German Sport University of Cologne, Germany (2001)
Major: Biomechanics
Minor: Sport Orthopedics

PROFESSIONAL EXPERIENCE:

- Fall 2001- present
Assistant Professor in Biomechanics
Department Physical Education, Health and Sports Studies
Miami University, Oxford, Ohio
- 2000-2001 Biomechanics Research Assistant
Department of Biomechanics
German Sport University of Cologne, Germany
- 1996-2000 Training and Movement Science Research Assistant
Department of Track and Field and Gymnastics
German Sport University of Cologne, Germany

HONORS AND AWARDS:

International Society of Biomechanics and Sport Student Research Award (1993)

TEACHING EXPERIENCE

- 2001-present Miami University, Oxford, Ohio
 Currently teaching or have taught: Biodynamics of Human Movement, Biodynamics of Human Movement Laboratory Experience, Functional Anatomy, and Motoric and Physiological aspects of Sport.
- 1996-2001 German Sport University of Cologne, Germany
 Presented segments various biomechanics seminars

JOURNAL PUBLICATIONS:

Arampatzis, A., Schade, F., Walsh, M., Brueggemann, G.-P. (2001) The effect of leg stiffness on mechanical power during jumping exercises. Journal of Electromyography and Kinesiology, 11, 355-364.

JOURNAL PUBLICATIONS: in press

Walsh, M., Arampatzis, A., Schade, F., Brueggemann, G.-P. The effect of starting height and contact time on power, work performed and moment of force during drop jumps. Journal of Strength and Conditioning Research.

BOOKS:

Walsh, M (2001). *Ermuedungsinduzierte Aenderung von Kinematik, Kinetik und Muskulaerer Aktivitaet im Dehnungs-Verkuerzungs-Zyklus bei reptitiven Sprungssimulationen*. Cologne, Sport und Buch Strauss.
 English translation - Fatigue; changes in body geometry, force production and muscular coordination during repetitive jumping.

CHAPTERS IN BOOKS:

Arampatzis, A., Brueggemann, G.-P., Walsh, M. (1997). Biomechanical Analysis of the Jumping Events: Long Jump. In Biomechanical Research Project, Athens 1997; Final Report. pp.83-113, Oxford: Meyer & Meyer.

CONFERENCE PRESENTATIONS:

Walsh, M., Klein, E., Rouse, J. (2004) The effects of arms and counter movement on vertical jumping of females. Presented at the XXIIInd Symposium of the International Society of Biomechanics in Sports. Ottawa, Canada

Klein, E., Walsh, M. (2004) Changes in ankle angle and muscle activation during cycling to fatigue. Presented at the XXIIInd Symposium of the International Society of Biomechanics in Sports. Ottawa, Canada

Walsh, M., Mademli, L. Brueggemann, G.-P., Arampatzis, A. (2004) The effects of submaximal concentric and isometric fatiguing contractions on the compliance of the gastrocnemius medialis tendon and aponeurosis. Presented at the 9th annual congress of the European College of Sports Science. Clermont-Ferrand, France.

Mademli, L., Walsh, M., Brueggemann, G.-P., Arampatzis, A. (2004) Neuromechanic behaviour of the gastrocnemius medialis muscle tendon unit before, during and after submaximal isometric fatiguing contractions. Presented at the 9th annual congress of the European College of Sports Science. Clermont-Ferrand, France.

Walsh, M. Brueggemann, G.-P. (2001). Kinematic changes at the hip, knee and ankle joints as a result of fatigue during a repetitive stretch-shortening cycle activity. Presented at the Symposium of the European Community of Sports Science: Cologne, Germany.

Walsh, M., Brueggemann, G.-P. (2000). The effects of fatigue on calf muscle electromyography parameters during a stretch shorten cycle activity. Presented at the Symposium of the European Community of Sports Science: Jyvaskyla, Finland.

Arampatzis, A., Walsh, M., Brueggemann, G.-P. (1998). Biomechanical analysis of the long jump at the XI Athletics World Championships in Athens, Greece. Presented at the Symposium of the International Society of Biomechanics in Sports; Konstanz, Germany.

Walsh, M. and Kanal, Y.(1997). Measurement of plant pressure during short contact time sports activities. Presented at the Symposium of the International Society of Biomechanics in Sports; Denton, Tx.

Walsh, M. and Hall, S. J. (1993). Kinematics of the pole vault approach. Presented

at the Symposium of the International Society of Biomechanics in Sports; Amherst, Ma. (Winner of the ISBS Student Research Award).

OTHER CONFERENCE ACTIVITY FOR SUMMER 2004

Chaired a thematic poster session titled 'Biomechanics of Jumping and Landing' at the American College of Sports Medicine annual national conference. Indianapolis, Indiana in June 2004

PRESENTATIONS AS INVITED LECTURER

Walsh, M. (2002) 'The use of elastic energy in sports'
Midwest American college of Sports Medicine meeting,
Deerborn, Michigan, September 2002.

Walsh, M. (2002) "Analyzing electromyographical data and mechanical vibrations by means of wavelets". Presented as part of a seminar for doctoral students of biomechanics at the German Sports University in Cologne, Germany, March, 2002.

PRIVATE PROJECTS (worked on these projects as part of a research group while at the German Sport University, Cologne Germany):

Insurance Project (1996-1998)

Examination of workplace related back pain in the food service industry (waiters, delivery people, bakers, etc.)

NIKE shoe projects (1998-2000)

- 1) Shoe testing for development of a new clay court tennis shoe.
- 2) Shoe testing for development of a new team handball shoe.

German Winter Olympic Training Center Projects

- 1) Optimization of the Bobsled start (1998)
- 2) Optimization of the Luge start (1997-2001) (Research is done at the Winter Olympic Training Center in Berchtesgaden, Germany. Visits are about 4 days each, 4-5 times a year.

CURRENT RESEARCH PROJECTS

The effects of arms and countermovement on vertical jumping: Gender differences

The effects of fatigue on vertical jump parameters