#### LEWIS PALEIAS - Health & Martial Arts

Here is a summary of collected research resources on benefits of Tai Chi.

http://members.aol.com/sltcca/research/tairesum.htm#Carbary91

## Summary Of Research On T'ai Chi Ch'uan

Current research indicates that T'ai Chi Ch'uan is a weight bearing and moderate intensity cardiovascular exercise. Practice of T'ai-Chi Ch'uan can improve balance, reduce falls and increase leg strength. It also lowers stress hormones, enhances respiratory and immune function and promotes emotional well-being. More specifically:

#### **Balance**

Improved strength, mobility, balance, endurance (*Tse & amp; Bailey,1992*) Significant improvement in balance maintained (*Wolfson, et al., 1993 & 1996*) Other balance related studies (*Judge, et al., 1993*)

### Cardiovascular

Lowers resting blood pressure (Sun, 1994), (Sun, et al., 1996), (Young, 1999) Low to moderate intensity exercise (Zhou, 1984)

Safe exercise for individuals at high risk for cardiovascular disease (Schneider & Leung 1991)

May delay decline of cardiorespiratory function in older adults (*Lai, et al., 1995*) May be prescribed as suitable aerobic exercise for older adults (*Lai, et al., 1993*) Most recommended aerobic exercise for coronary artery disease (*Ng 1992*) In relation to recovery from heart attack (*Channer, et al., 1996*) Other cardiovascular related studies (*Gong, et al., 1981*), (*Lan, et al., 1996*)

# Elderly or Aging Populations

General studies (Ross & Samp; Preswalla, 1998), (Sun, 1994), (Lan, et al., 1998),

### Immune Response (Blood T-Cells)

Marked increase during and after practice (Sun. et al., 1989)

### Mood States (Self Reports)

Reduced tension, anxiety fatigue, depression and confusion (Jin 1989)
Improved mood states, reduction of anxiety states, (Jin1992)
Reduced Anxiety (Chen & Sun 1997)
Other Self Report studies (Kutner, et al., 1997), (Blinde & Sun 1997)

### Reduced Falls

Reduced falls by up to 47%, reduced fear of falling (Wolf, et al., 1993, and 1996, and 1997), (Henderson, 1998), (Myers & Weiner, 1996), (Province, et al, 1995) & Preventing Falls (Carbary, 1991), (Smith, 1998), (Kessenich, 1998)

## Respiratory

Increased efficiency in use of ventilatory volume (*Brown, et al., 1989*)
Enhanced ventilary capacity without cardiovascular stress (*Brown et al, 1995*)
Efficient use of ventilatory volume, efficient breathing patterns
(*Schneider & Description of the English of the Schneider & Description of the English of the English* 

Medical Tribune News Service article discussing research led by <u>Dr. Jin-Shin Lai</u> of the department of physical medicine and rehabilitation at the National Taiwan University Hospital in Taipei.

## Stress Hormones (Salivary Cortisol Levels)

Significant drop during and after practice (Jin 1989, Jin 1992)

### Weight Bearing Exercise

No exacerbation in joint symptoms of individuals with RA (*Kirstens,et al., 1991*) Alternative exercise therapy as part of Rehabilitation Program (*Kirstens, et al., 1991*)

Increased joint flexibility (Sun. 1994) and 1996)

### Other Anecdotal Benefits Referenced

Relaxation therapy for chronically ill (Jin 1992)

Therapeutic action for diminished range of motion (*Kirstens, et al., 1991*) Reduced blood pressure, improved muscle relaxation and flexibility (*Chen & amp; Sun 1997*), (*Sun 1994* and *1996*) And Dementia (*Gibb, et al., 1997*)

## Other General Studies

Other studies (Kirsteins, 1998), La Forge, 1997), (Lam, 1998), (Lutz, 1996)

#### Research References

Achiron A, et al. Electrical sensation during Tai-Chi practice as the first manifestation of multiple sclerosis. Clin *Neurol Neurosurg.* 1997 Dec; 99(4): 280-281. CIT. IDS: PMID: 9491306 UI: 98152006

Blinde, E.M. & McClung, L. R. Enhancing the physical and social self through recreational activity: Accounts of individuals with physical disabilities. *Physical Activity Quarterly.* 1997 Oct Vol 14(4): 327-344 Abstract
Brown DD, Mucci WG, Hetzler RK, Knowlton RG. Cardiovascular and ventilatory responses during formalized T'ai Chi Chuan exercise. Research Quarterly for Exercise & Sport. 1989;60:246-250. Abstract

Brown DR, Wang Y, Ward A, et al. Chronic effects of exercise and exercise plus cognitive strategies. *Med Sci Sports Exer.* 1995;27:765-775. CIT. IDS: PMID: 7674883 UI: 95405217 Abstract

Carbary, LJ. How to help prevent falls. J Pract Nurs. 1991 Jun; 41 (2): 13-4 Channer KS, Barrow D, Barrow R, Osborne M, Ives G. Changes in hemodynamic

parameters following T'ai Chi Chuan and aerobic exercise in patients recovering from acute myocardial infarction. *Postgraduate Medical journal* 1996;72:349-351. CIT. IDS: PMID: 8758013 UI: 96318925

Chen, W.; Sun, W. Tai Chi Chuan, an alternative form of exercise for health promotion and disease prevention for older adults in the community. Internat'l Quarterly of Community Health Education. 1997 Vol 16(4) 333-339

Gibb H, et al. A therapeutic programme for people with dementia. *Int J Nurs Pract.* 1997 Sep; 3(3): 191-199. CIT. IDS: PMID: 9391353 UI: 98052837

Gong LS et al. Changes in heart rate and electrocardiogram during taijiquan exercise. *Chinese Medical journal*; 1981:94(9) 589-592.

Henderson NK, et al. The roles of exercise and fall risk reduction in the prevention of osteoporosis. *Endocrinol Metab Clin North Am.* 1998 Jun; 27(2): 369-387. Review. CIT. IDS: PMID: 9669143 UI: 98333750

Jin P. Changes in heart rate, noradrenaline, cortisol and mood during T'ai Chi. *Journal of Psychosomatic Research.* 1989;33:197-206. Abstract

Jin P. Efficacy of t'ai-chi, brisk walking, meditation, and reading in reducing mental and emotional stress. *J Psychosom Res.* 1992;36:361-370. Abstract

Judge JO, Lindsey C, Underwood M, Winsemius D. Balance improvements in older women: effects of exercise training. *Phys Ther.* 1993;73:254-262.

Kessenich, CR. Tai Chi as a method of fall prevention in the elderly. Orthop Nurs. 1998 Jul-Aug; 17 (4): 27-9

Kirsteins AE, Dietz F, Hwang SM. Evaluating the safety and potential use of a weight-bearing exercise, tai-chi chuan, for rheumatoid arthritis patients. *American Journal of Phys Med and Rehab*; 1991; 70 (3):136-141. Kirsteins A *Tai-Chi Chuan*. Arch Phys Med Rehabil. 1998 Apr; 79(4): 471. No abstract available. CIT. IDS: PMID: 9552121 UI: 98211848

Kutner NG Barnhart H Wolf SL McNeely E Xu T. Self-report benefits of tai chi practice by older adults. *J of Gerentology* . 1997 52 (5): 242-46. CIT. IDS: PMID: 9310093 UI: 97455881

La Forge R Mind-body fitness: encouraging prospects for primary and secondary prevention. *J Cardiovasc Nurs.* 1997 Apr; 11(3): 53-65. Review. CIT. IDS: PMID: 9095454 UI: 97249568

Lai JS, Wong N4K, Lan C, Chong CK, Lien IN. Cardiorespiratory responses of t'ai chi chuan practitioners and sedentary subjects during cycle ergometry. *J Formosan Med Assoc.* 1993;92:894-899. Abstract

Lai JS, Lan C, Wong MK, Teng SH. Two-year trends in cardiorespiratory function among older tai-chi chuan practitioners and sedentary subjects. *J Am Geriatric Soc.* 1995; 43:1222-1227. CIT. IDS: PMID: 7594155 UI: 96046716 Abstract

Lam P New horizons ... developing tai chi for health care. Aust Fam Physician. 1998 Jan; 27(1-2): 100-101. CIT. IDS: PMID: 9503718 UI: 98164467

Lan C, et al. Cardiorespiratory function, flexibility, and body composition among geriatric Tai Chi Chuan practitioners. *Arch Phys Med Rehabil.* 1996 Jun; 77(6): 612-616. CIT. IDS: PMID: 8831482 UI: 96428379

Lan C Lai JS Chen SY Wong MK. Twelve-month tai chi training in the elderly: its effects on health and fitness. *Med & Sci in Sports & Sci in Sci in Sports & Sci in Sci in Sports & Sci in Sci in Sports & Sci in Sports & Sci in Sci in* 

Lutz S The benefits of Tai Chi. *Beginnings*. 1996 Apr; 16(4): 3. No abstract available. CIT. IDS: PMID: 8715985 UI: 96360526

Myers, E. R. & Die Weiner, G. I. Injury Prevention: Keeping Old Bones Whole. Harvard Health Letter. 21(11); September 1996. Abstract

Ng RK. Cardiopulmonary exercise: a recently discovered secret of t'ai chi. *Hawaii Medical journal.* 1992;51:216-217.

Province MA, Hadley EC, Hornbrook MC, et al. The effects of exercise on falls in elderly patients. A preplanned meta-analysis of the FICSIT Trials. Frailty and injuries: cooperative Studies of Intervention Techniques. *JAMA*. 1995;273:13411347. CIT. IDS: PMID: 7715058 UI: 95230871 Abstract Ross MC Preswalla JL. The therapeutic effects of tai chi for the elderly. *J of Gerontol Nurs*. 1998 24(2):45-7.

Schneider D, Leung R. Metabolic and cardiorespiratory responses to the performance of wing chun and t'ai-chi chuan exercise. Int *J of Sports Med.* 1991;12(3):319-23. Abstract

Smith, CE. Preventing falls in the elderly. Am Fam Physician. 1998 Apr 1; 57 (7): 1497-8.

Sun XS, Xu Y, Xia Yj. Determination of E-rosette-forming lymphocytes in aged subjects with Taichiquan exercise. *Int J of Sports Med* 1989;10:217-219.

Sun, W.Y. Impact of a Tai Chi Chuan Program on the Health of Among Older Adults. *Student Monograph.* 12(1):73-80, July 1994. Abstract

Sun, W. Y.; Dosch, M.; Gilmore, G.; Pemberton, W.; Scarseth, T. Effects of a Tai Chi Chuan program on Hmong American older adults. *Educational Gerontology*.

1996 Mar Vol 22(2) 161-167 (Same as previous citation, published in a different periodical, see Sun, 1994)

Tse S, Bailey DM. T'ai Chi and postural control in the well elderly. *Am J Occ Ther.* 1992;46:295-300.

Wolf SL, Kutner NG, Green RC, McNeely E. The Atlanta FICSIT study: two exercise interventions to reduce frailty in elders. *J Am Geriatric Soc.* 1993;41:329332.

Wolf SL, Barnhart HX, Kutner NG, McNeely E, Coogler C, Xu T. Reducing frailty and falls in older persons: an investigation of T'ai Chi and computerized balance training. *J Am Geriatric Soc.* 1996; 44:599-600. CIT. IDS: PMID: 8617895 UI: 96208898 Abstract

Wolf SL, et al. Exploring the basis for Tai Chi Chuan as a therapeutic exercise approach. *Arch Phys Med Rehabil.* 1997 Aug; 78(8): 886-892. CIT. IDS: PMID: 9344312 UI: 98002997

Wolf SL, et al. The effect of Tai Chi Quan and computerized balance training on postural stability in older subjects. Atlanta FICSIT Group. Frailty and Injuries: Cooperative Studies on Intervention Techniques. Phys Ther. 1997 Apr; 77(4): 371-381. CIT. IDS: PMID: 9105340 UI: 97259220

Wolfson L, Whipple R, Judge J, Amerman P, Derby C, King M. Training balance and strength in the elderly to improve function.

J Am Geriatric Soc. 1993;41:341343.

Wolfson L, Whipple R, Derby C, Judge J, King M, Amerman P, Schmidt L Smyers D. Balance and strength training in older adults: intervention gains and T'ai Chi maintenance. *J Am Geriatric Soc.* 1996;44:498-506. CIT. IDS: PMID: 8617896 UI: 96208899 Abstract

Young, D. R., *Missing Title*, Journal of the American Geriatrics Society 1999; 47:277-284 Summary Article

Zhou DH. Preventive geriatrics: an overview from traditional Chinese medicine. *American Journal of Chinese Medicine*. 1982;10:32-39.

Zhou D, Shephard Rj, Plyley Mj, Davis GM. Cardiorespiratory and metabolic responses during Tai Chi Chuan exercise. *Canadian Journal of Applied Sport Sciences*. 1984;9:7-10.

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